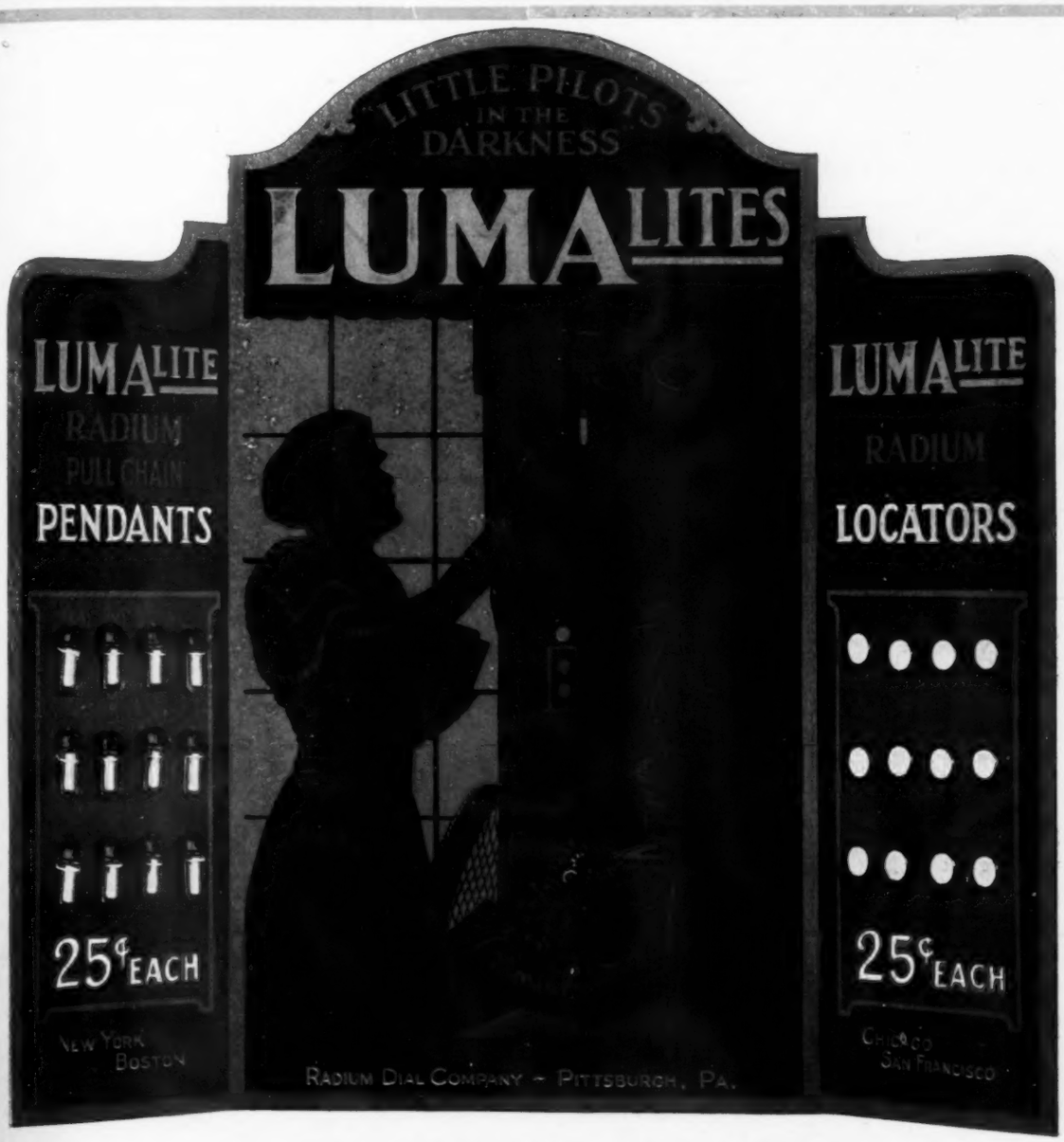
NATIONAL ELECTRAGIST

FORMERLY ELECTRICAL CONTRACTOR-DEALER

WITH RADIO SERVICE SUPPLEMENT

Vol. 22, No. 4 | Official Journal of ASSOCIATION OF ELECTRAGISTS—International | FEBRUARY, 1923



A GLOWING OFFER

JOBBERS AND DEALERS INTERESTED IN SELLING THEIR TRADE THE BEST LUMINOUS RADIUM PENDANTS AND LOCATORS OBTAINABLE SHOULD WRITE US AT ONCE FOR DISCOUNTS AND SAMPLES ON **LUMAlites.** THEY GLOW CONSTANTLY LIKE FIRE FLIES IN DARKNESS.

RADIUM DIAL COMPANY

501 Fifth Avenue New York City

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XUM

SIGNAL FARADAY GONGS

-FACTS-

YOU SHOULD KNOW

WILL OPERATE ON ALL APPROVED SOURCES OF ELECTRICAL ENERGY. WOUND TO ANY RESISTANCE DESIRED.

ENTIRE MECHANISM PROTECTED FROM DAMPNESS AND INJURY BY SOLID-BACK FRAME AND HEAVY CAST IRON HOUSING, FITTING FIRMLY ONTO MARINE RUBBER GASKET.

MADE IN VIBRATING, SINGLE STROKE, COMBINATION SINGLE STROKE AND VIBRATING, ELECTRO-MECHANICAL AND MAGNETO-EXTENSION TYPES.

MADE IN SKELETON AND ENCLOSED TYPES, THE LATTER WITH NON-GUARDED, HALF-GRID GUARDED AND FULL-GRID GUARDED GONGS. SIZES, 2 TO 18 INCHES. SINGLE OR DOUBLE GONGS.

ELECTRICAL MECHANISM INSULATED FROM FRAME, ALL TERMINALS CARRYING CURRENT MOUNTED WITHIN HOUSING.

PATENTED HIGH-POWER ARMATURE KEPT IN MAGNETIC FIELD UNTIL BALL STRIKES GONG, GIVING TWICE THE POWER OF ANY OTHER BELL MECHANISM MADE.

Have you our Faraday Signal Gong Bulletin?

:—:

A postal from you will bring it promptly

OUR GUARANTEE

Covering a period of two years from date of sale accompanies every piece of apparatus we manufacture.

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STANLEY & PATTERSON, INC.

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"U. S." Paracore for Better Lighting

THE importance of perfect illumination in the theatre cannot be overestimated.

And perfect illumination is dependent upon perfect wiring.

Realizing this fact, the electrical contractors for the Criterion Theatre in Oklahoma City, Oklahoma naturally chose U. S. Paracore.

U. S. Paracore Wire is usually the selection where a quality job is desired.

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United States Rubber Company

1790 Broadway, New York

Trade US Mark

NATIONAL ELECTRAGIST

FORMERLY ELECTRICAL CONTRACTOR-DEALER

(Trade Mark)

The Official Journal Published Monthly by the Association of Electragists—International

FARQUSON JOHNSON
Editor and General Manager

Radio Service Supplement Last Section

JAY S. TUTHILL
News Editor

Volume 22 **FEBRUARY, 1923** *Number* 4

TO OUR READERS

All matter for publication must be in the hands of the Editor by the 10th of the month preceding publication.

All changes in our mailing list should be received by us two weeks prior to date of publication of the issue with which the change is to take effect.

TO OUR ADVERTISERS

Changes in advertisements and all advertising copy should reach our office not later than the TENTH OF THE MONTH previous to the date of issue.

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Editorial and Business Office:
15 West 37th Street, New York City

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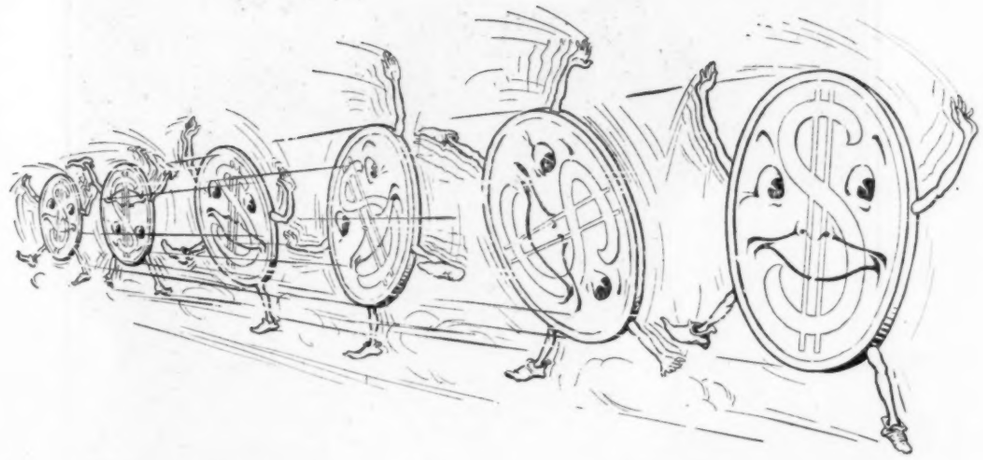
ALPHADUCT is the Non-Metallic Conduit with the INNER LINING of Heavily Glued COTTON DUCK, often, and for many years, called the "WHITE INSIDE," which is lubricated with powdered mica and soapstone rendering it the Easiest of all Conduits to fish, as a trial will prove.

All sizes of ALPHADUCT up to and including 1 inch are packed in individual Cartons which protect and keep the material in order in a neat way so it does not become strewn about when being used. Just the quantity desired may be withdrawn through a hole in the center of the Carton which remains otherwise intact and of attractive appearance.

ALPHADUCT COMPANY

Jersey City, New Jersey



Do Your Employee Dollars Loaf?

If you think of the dollars of your working capital as employees who have got to move fast to earn a profit for you, the importance of rapid turnover is clear.

The faster and the oftener "cash" becomes "goods" and "goods" become "cash" including a profit the more money you'll make.

A quick acting source of supply like the nearby Western Electric Distributing House can help you do this.

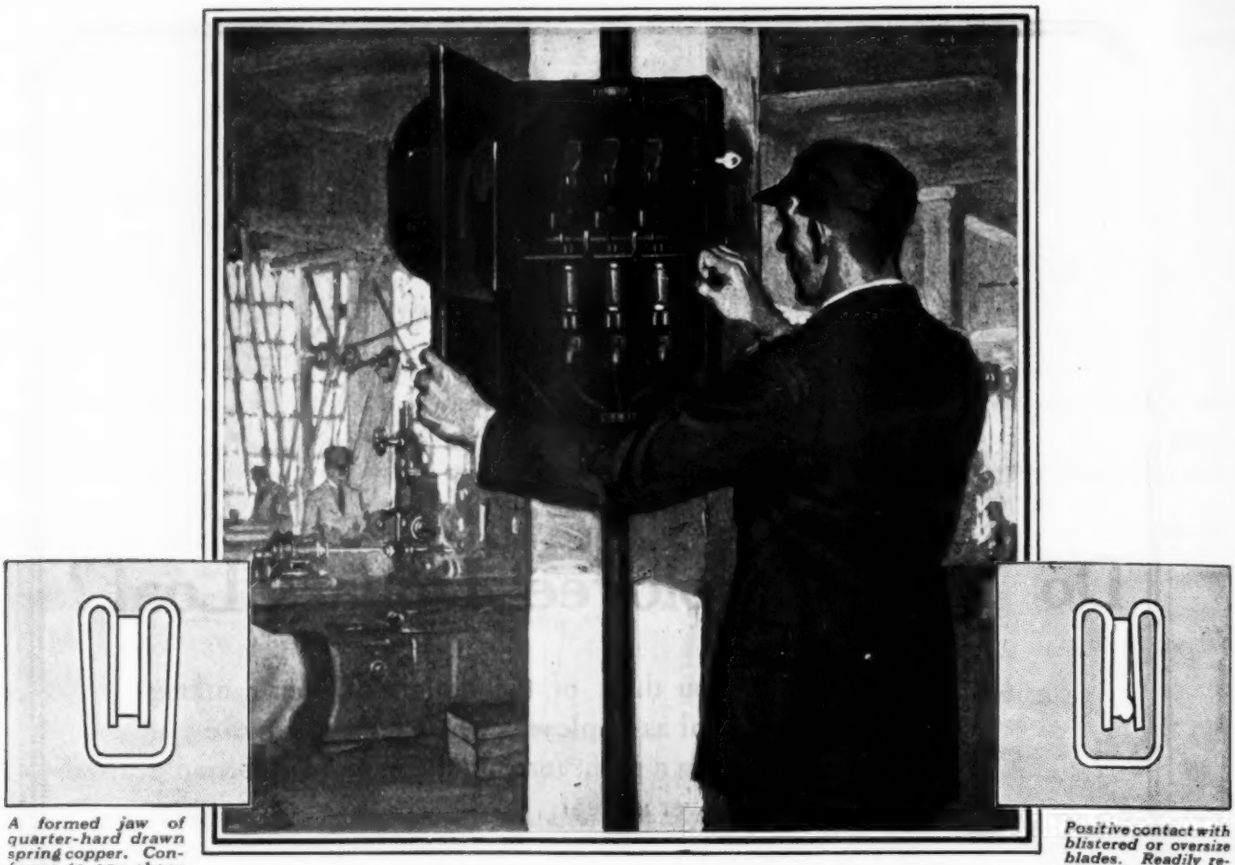
It can provide everything you need. It carries varied stocks. It is nearby. It has or can get you quickly everything electrical you need and you won't have to deal with a dozen different sources.

Address our nearest House.

A National Electrical Service

Western Electric Company

OFFICES IN ALL PRINCIPAL CITIES



A formed jaw of quarter-hard drawn spring copper. Conforms to any shape of blade.

Positive contact with blistered or oversize blades. Readily realigned at any spring action.

Square D Multi-Spring Jaw

3 Points of Spring Action Insure Perfect Contact Under All Conditions

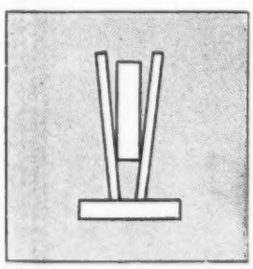
The superiority of the Square D Multi-Spring Jaw, and the reason for its use in the new 80000 Series switch, is pointed out by Prof. R. Edler in his authoritative book "Switches and Switch Gear."

He says, "The form of spring contact which was formerly much used was constructed by milling out a slot in the contact block. This method had, however, the disadvantage that the smallest inaccuracies in workmanship resulted in the production of a very poor contact. The design consisting of two springs soldered in a block of brass or copper is not much better. An excellent contact, however, is obtained by the use of a jaw which is made of spring sheet copper, gripped and held by screws on the contact block." * * * The "excellent contact" jaw referred to is the Square D Multi-Spring Jaw, except that strip copper is used instead of sheet stock.

Exclusive Feature of Inspection

In addition to having an insulated steel crossbar and all current carrying parts mounted on individual bases of molded insulating material, the 80000 Series has patented cover control with these features: The cover cannot be opened when the switch is on; the switch cannot be closed when the cover is open; and use of the Square D key permits authorized persons to inspect the switch during operation—to open the cover when the switch is on and operate the switch when the cover is open.

For literature and complete details of this newest Square D product embodying for the first time all the features ever demanded in a safety switch, communicate with our nearest office.



An oversize blade in a milled jaw. The slight contact produces heat at the bottom of the jaw where the spring action is destroyed and the jaw ruined.

SQUARE D COMPANY, DETROIT, U. S. A. (25)

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DETROIT, MICH. PERU, IND. WALKERVILLE, ONT.

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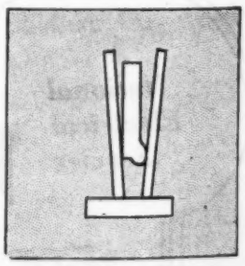
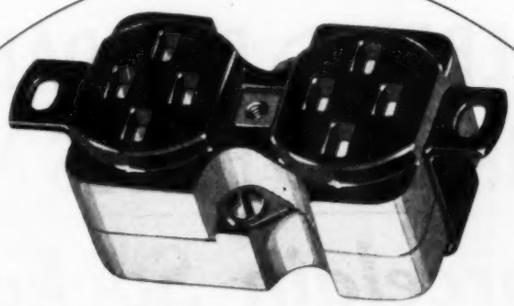
Montreal	Atlanta	Cleveland	San Francisco	

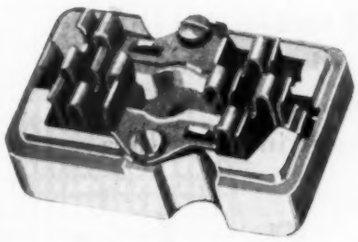
SQUARE D SAFETY SWITCH



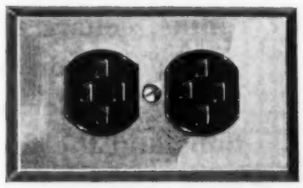
Showing how a blistered blade in the milled jaw gives insufficient contact. This causes overheating and ruins both blade and jaw.



"Duplex Convenience Outlet"



"Terminal and Jaw are made from one piece of metal—no loose connections."



"Duplex Outlet with Plate"

An Appeal to Electragists—

ELECTRIFY! That is the great national movement now under way. And one of the great aims of this movement is to install more convenience outlets. It is your opportunity—prescribe and sell more outlets.

Both Single and Duplex Convenience Outlets are now manufactured by the Square D Company.

FITS ALL PLUGS

The single and duplex convenience outlets will accommodate tandem, parallel, or polarized blade plugs.

"Single Convenience Outlet."

SIMPLICITY IN DESIGN

Terminals and jaws are made from one piece of metal, avoiding connecting screws and guaranteeing good connection. No sealing wax is used—all live parts are enclosed by two pieces of porcelain.

SERVICE

Jaws are the Square D multi-spring type, with contact on both sides of inserted blades. Current carrying parts are unusually heavy and springy.

EASY TO INSTALL

The convenience outlets are easily installed. They are thin and can be easily used with the shallow type outlet box. Terminal screws are large grooved and easily accessible. Furnished with mounting screws and washers.

Get into the national movement for more outlets. Square D Jobbers can give you prompt service on your requirements.

SQUARE D COMPANY, DETROIT, U. S. A.

FACTORIES AT: DETROIT, MICH., PERU, IND., WALKERVILLE, ONT.

Branch Offices: Boston, Buffalo, Chicago, New York, Pittsburgh, St. Louis, Toronto, Philadelphia, Cincinnati, Milwaukee, Montreal, Atlanta, Cleveland, San Francisco, Winnipeg, Vancouver

XUM

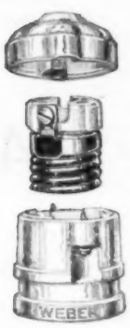
WEBER DEPENDABLE WIRING DEVICES

Porcelain Sockets

have important advantages over metal shell sockets for bathrooms, cellars, kitchens and other places where dampness, steam, dust or fumes are present. Porcelain does not deteriorate under any of the conditions present in these locations and the finish is indestructible.

Weber Porcelain Sockets

have important advantages over all makes. They are constructed on the same wiring principle as brass shell sockets, and, in many of the various devices, the interior parts are identical with those used in brass shell devices.



And the Line is Complete

Six Socket Bodies

Five Switch and Rosette

Twelve Caps

Sixteen Bases

On your next order for porcelain sockets, specify WEBER

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General Sales Agent

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BOSTON 11, MASSACHUSETTS

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New complete catalog of Arrow attachment plugs and accessories

No. 8212

THE duplex outlet for all installations. It can be had in 3 styles: Composition, top or side wired; Porcelain, top wired. You'll need the Arrow Attachment Plug Catalog for latest developments in this constantly growing line.

"MORE properly a service than a line," someone has said, "as it presents both the *already-done* and the *never-before-done,* in attachment plugs and accessories."

This new, complete catalog of all that is both new and old in this complete line, supplements and supersedes all previous catalogs. The pricing and listing has been simplified for quick reference and easy buying. There's a wide variety of devices for selection.

You will need this new catalog—at your hand! If it hasn't already reached your desk write at once. "Arrow" stands for quality, convenience and service always.

THE ARROW ELECTRIC COMPANY
Hartford, Conn.

ELECTRICAL ARROW WIRING DEVICES

ARROW

The complete line of Wiring Devices

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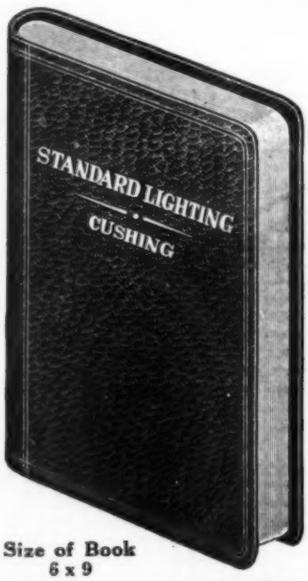

Size of Book
6 x 9

(SECOND EDITION—ENLARGED—REVISED)

"THE NATIONAL AUTHORITY ON ELECTRIC LIGHTING"

STANDARD LIGHTING

WITH INCANDESCENT ELECTRIC LAMPS

COMPILED BY A STAFF OF EXPERTS

Endorsed by the Lighting Department of the Joint Committee for Business Development in the Movement to "ELECTRIFY"

The movement for Business Development is being promoted by the following national organizations: National Electric Light Association; Electrical Supply Jobbers' Association; National Association of Electrical Contractor-Dealers; National Council of Lighting Fixture Dealers; The Illuminating Glassware Guild; Illuminating Engineering Society; The American Institute of Electrical Engineers.

In the Compilation of "Standard Lighting", we give credit to the following authorities:

S. E. Doane, G. H. Stickney, D. W. Atwater, A. B. Oday, Ward Harrison, A. L. Powell, S. G. Hibben, H. A. Smith, R. E. Harrington, A. S. Turner, C. A. Atherton, M. Luckiesh, Earl A. Anderson, J. H. Kurlander, G. A. Clewell, H. H. Magdsick and J. R. Colville

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The Code of Lighting for Factories, Mills and Other Work Places, prepared and issued by the Illuminating Engineering Society.

272 Pages — 240 Illustrations and Diagrams — 55 Tables — Leatherette Cover — Gilt Edges

Sent Post Paid to Any Address on receipt of $3.00

ASSOCIATION OF ELECTRAGISTS—International, 15 West 37th St., New York

They Come in Packages
X-Ray Luminaires
For Eye Comfort

No. 4801

No. 2900

X-Ray Eye Comfort Lighting

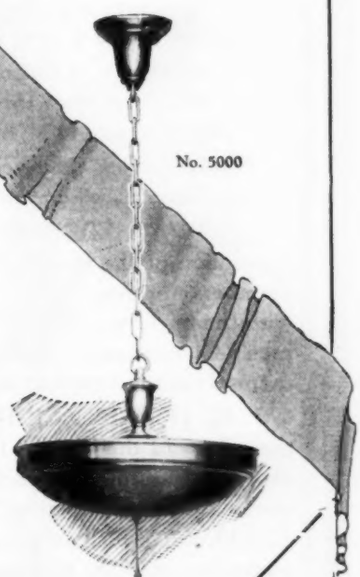
Has made Indirect Lighting popular because of its efficiency and eye comfort.

Every Eye Comfort Luminaire contains an X-Ray Reflector which directs all the light to the ceiling where it is diffused throughout the entire room, giving a pleasant, restful illumination.

No. 3000

One To The Package

These X-Ray Luminaires and Adapters are complete one to the package ready for immediate shipment and quick installation. Easy to handle, easy to sell.



No. 5000

Where to Sell 'Em

Luminaire No. 4801

Simple in construction; finish washable cream. For offices, schools, factories or anywhere where an inexpensive fixture is desired. Made in three sizes for 100-150, 200 or 300-500 watt lamp.

Curtis Adapter No. 3000

Can be mounted on any floor or table lamp. For completely lighting an entire room without the use of ceiling fixtures. Uses 75, 100, 150 or 200 watt lamp. Especially adapted for homes, clubs, shops or hotels.

Luminaire No. 5000

A brass fixture finished in antique silvertone. For homes, clubs and hotels. Adjustable for use with two 75, 100 or 150 watt Mazda lamp. Ready for immediate shipment, and easy to install.

Candle Adapter No. 2900

Ordinary candle fixtures, when equipped with the Curtis Adapter become useful as well as ornamental, and give the same pleasing indirect light as any other X-Ray Eye Comfort luminaire.

Write for Discounts and Recommendations

National X-Ray Reflector Co.

New York Chicago Los Angeles

Engineers in all principal cities

NATIONAL X-RAY REFLECTOR CO.
229 West Jackson Boulevard, Chicago
I want to know all about X-Ray Adapters and how to sell them. Send me literature and discounts.

Name.....

Address.....

IN 1915 the Insurance Committee of the National Association of Electrical Contractors and Dealers investigated and recommended to their membership the plan of Insurance at Cost as conducted by Lynton T. Block & Co., of St. Louis.

Now in 1921, after six years of experience in dealing with this well known insurance organization, this same committee has expressed its continued unqualified satisfaction in the resolution contained on this page.

This resolution is therefore presented in this form for the benefit and information of the membership at large.

SIX YEARS OF SATISFACTION
1915-1921

SIX YEARS of satisfactory dealings with Lynton T. Block & Co., Underwriters, of St. Louis, has prompted your Insurance Committee again to go on record as endorsing their plan of insurance, with the attendant saving in money to our members.

Every Insurance Policy placed with this concern increases its ability to serve you better, both in the lowered rates it has influenced and the yearly saving it accomplishes. If the bulk of our members would avail themselves of this tangible advantage of membership, the saving made possible by the action of your Committee would probably total **Fifty Thousand Dollars Every Year.** Volume of business will do this. Your Insurance Committee has done its part; you should do yours and not only save money for yourself, but help your fellow members to save this enormous aggregate.

EVERY promise made by this underwriting organization has been more than faithfully kept, and the advantages have from time to time been increased without any solicitation or additional obligation on the part of the Assured.

Insurance with them costs less than it did six years ago, the coverage is more complete, and the savings are increased wherever deserved. The individual experience of the individual risk is now taken into account in determining the savings.

Inquiry addressed to Lynton T. Block & Co., Underwriters, St. Louis, Mo., or to the Secretary of your Association will bring full particulars regarding Insurance at Cost.

THE RESOLUTION SPEAKS FOR ITSELF—

RESOLUTION

Recognizing the insurance problems confronting this organization, and for the purpose of procuring the best indemnity at the lowest cost, the Executive Committee of this Association, after a careful and thorough investigation by its Insurance Committee in 1915, endorsed the plan of "Insurance at Cost," as conducted by Lynton T. Block & Co., Underwriters, of St. Louis, Mo., through their several Insurance organizations, and recommended to the members of this Association that they avail themselves of the saving in cost and the high character of service afforded.

WHEREAS, a large proportion of the members of this Association have for the past six years, carried their insurance through Lynton T. Block & Co., and found the saving in money to be substantial and the service to be highly satisfactory, and

WHEREAS, the Executive Committee deems these insurance arrangements to be among the important benefits which have been provided for members of this Association;

NOW, THEREFORE, BE IT RESOLVED, That the Executive Committee ratify its former endorsement of the Insurance and Service afforded by Lynton T. Block & Co. and urge upon those members not now taking advantage of it to lend their cooperation in this respect and communicate with the St. Louis Office of Lynton T. Block & Co. in matters pertaining to Fire, Casualty and Workmen's Compensation Insurance, with a view to adding momentum to this movement and securing for themselves the benefits which are made available for them.

BE IT FURTHER RESOLVED, That the Insurance Committee of the N. A. E. C. & D. finds the affairs of the various Insurance organizations of Lynton T. Block & Co. to be administered honestly and skillfully; financially sound and worthy of confidence; that each such organization has ample assets for the protection of its Policy Holders, being backed in each case by Assets in excess of $2,000,000, which serves as a direct guarantee for the payment of losses and the elimination of any assessment liability whatsoever.

The Insurance Organizations herein referred to are:—

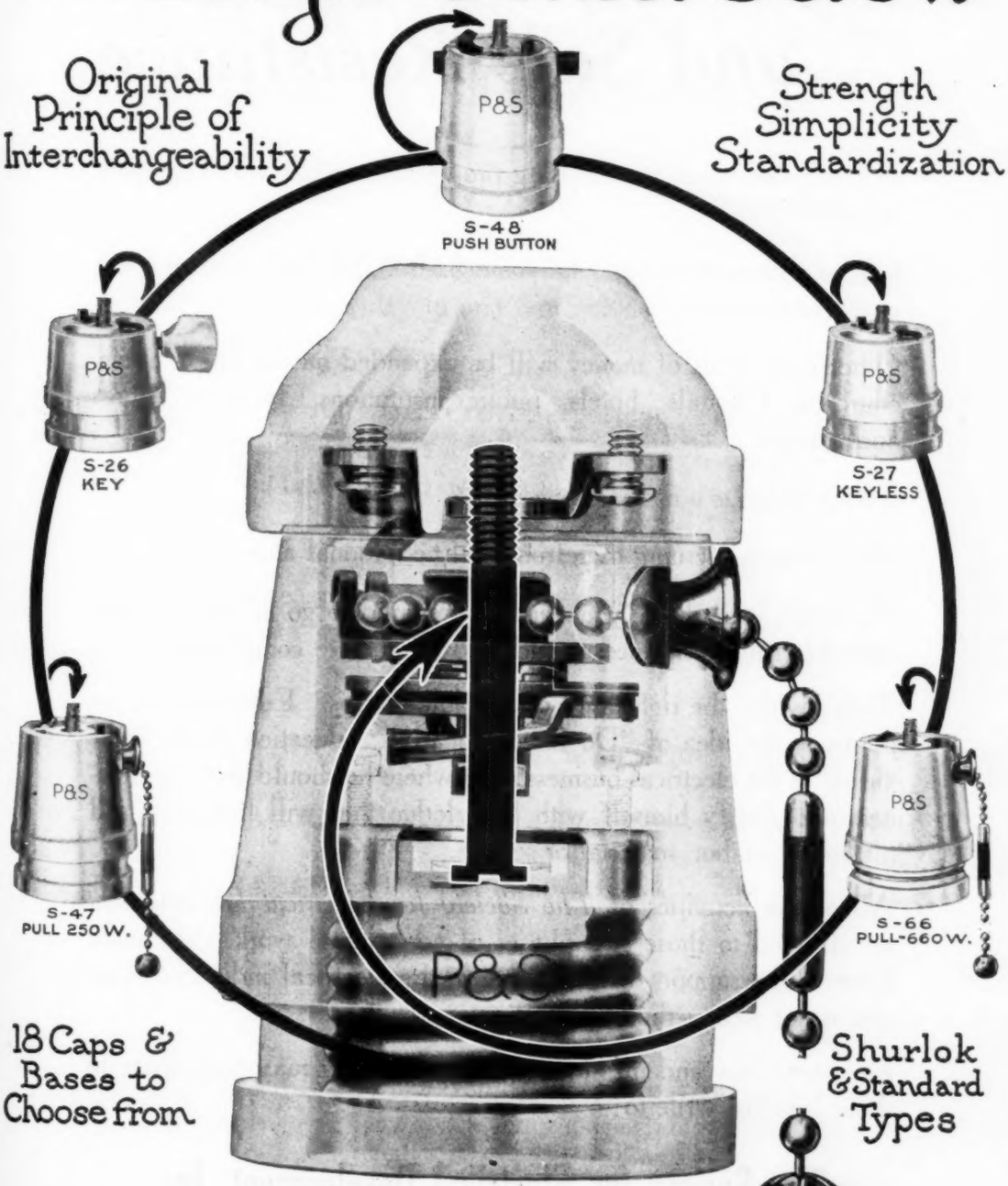
Employers Indemnity Corporation,	St. Louis, Mo.
Utilities Indemnity Exchange,	St. Louis, Mo.
Utilities Fire Exchange,	Kansas City, Mo.
Exchange Mutual Indemnity Insurance Co.,	Buffalo, N. Y.

(Signed) J. A. Fowler, Chairman Insurance Committee,
National Ass'n Electrical Contractors & Dealers.

The Single Center Screw

Original Principle of Interchangeability

Strength Simplicity Standardization



18 Caps & Bases to Choose from

Shurlok & Standard Types

Mechanically Right
Few parts to stock
Your Jobber has them – ask him to-day.

Pass & Seymour Inc. Solvay, N.Y.

$6,000,000,000— and Sale Resistance

It is estimated that the building program for 1923 will aggregate $6,000,000,000.

Out of that colossal amount, some $2,000,000,000 will be spent on building homes.

Other great sums of money will be expended on erecting schools, churches, hospitals, hotels, public institutions, factories, stores and garages.

The program is a national one.

The business accruing therefrom will be national also.

To obtain your share, you must be prepared to go up against considerable sales resistance in addition to intensive competition.

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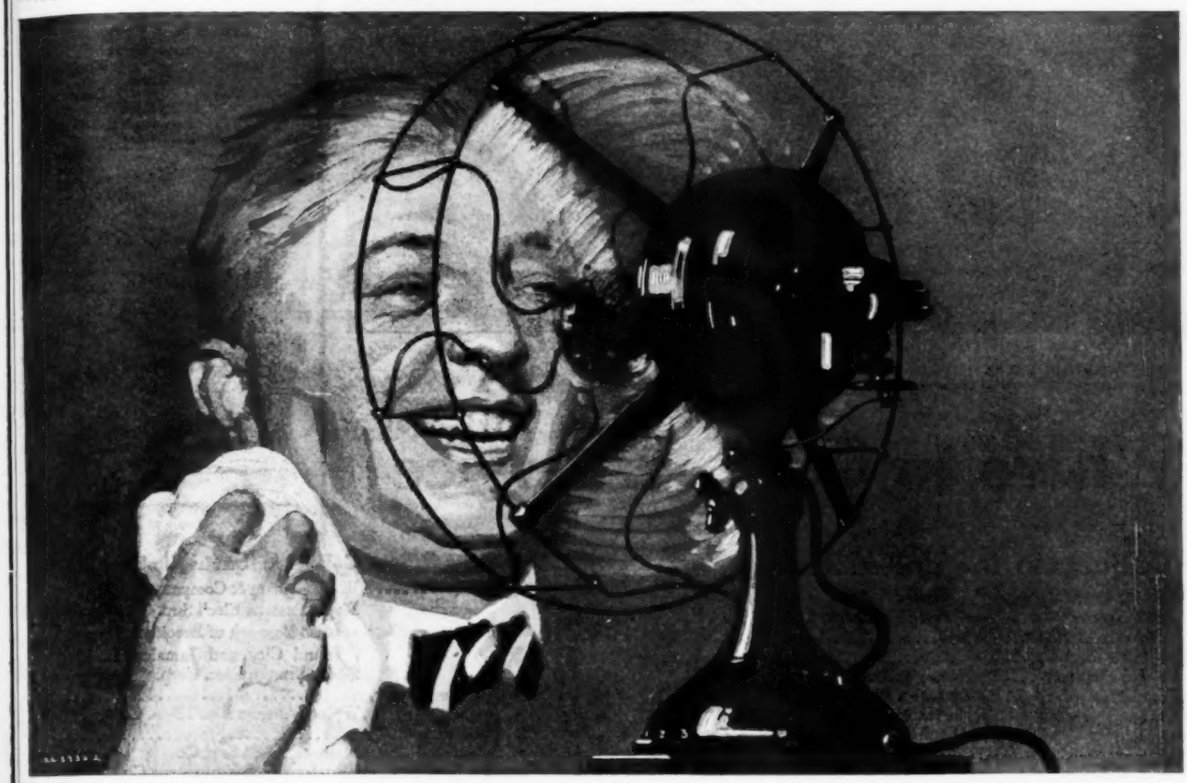

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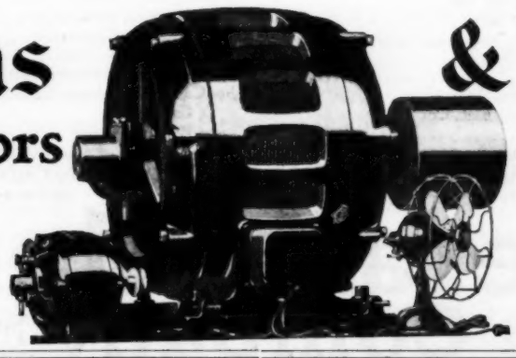

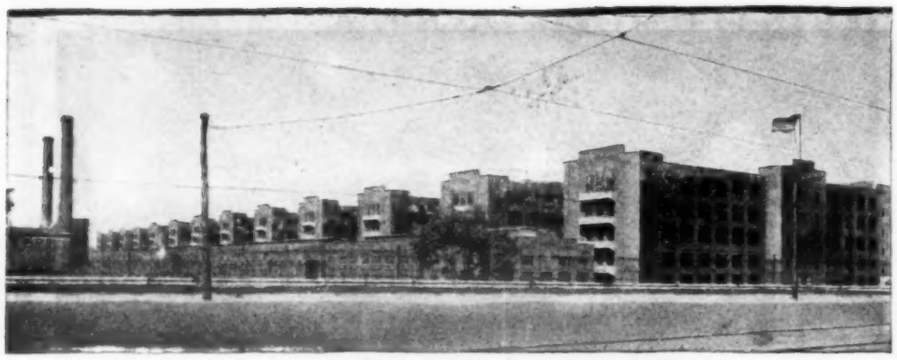

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This Year's Convention

The annual convention of the Association of Electragists—International, is to be held in Washington, D. C., this year, which of itself should be an assurance of an unusually large attendance. Those who never have visited Washington should do so; those who have been there once will want to go again; and those who know it intimately never lose a chance to go there.

As the convention will not take place until the week of October 8, 1923, it is rather early to make any definite announcement regarding the program. But it is said that the committee is busily engaged in perfecting plans which are to be made public in the near future.

Although the coming event is to be the twenty-third annual convention of the contractor-dealer branch of the electrical industry, it will be the premier performance of electragists along those lines. At the Cincinnati convention last October the new title was adopted, and authority was given to license members to use the trademarked word.

The electrical interests of Washington are already preparing for a large gathering next October and are offering every assurance of true hospitality. It is not too early to make plans for attending. Every electragist should mark his calendar for the second week of next October—On to Washington.

Injuring the Entire Industry

In a recent statement, Franklin D. Roosevelt, president of the American Construction Council, said that the public should be brought to a realization of the importance of the building industry; and then when this industry's integrity and its rendering of public service are assured, the public's confidence in it will be restored.

Electrical contractors do not all seem to realize that they are a part of the great construction industry. Leastwise they take little part in helping to restore public confidence. Contrariwise, they are destroying confidence. They are tearing down integrity. They are making a joke of electrical contracting. They are nothing but common gamblers.

It is said that there is honor among thieves—and yet outside of that nefarious calling nobody will trust a thief. No more confidence should be placed in a gambler.

When an electrical contractor knowingly takes a job for thousands of dollars less than the actual cost of the job, he ceases to be a legitimate business man. He is a gambler—and worse.

It is well known that such so-called contractors aim to make up their potential losses on excessive charges for extra work. They start as gamblers and end as gougers—profiteers, to say the least.

Such knavery will never restore confidence in the public mind. Carried to excess it will kill a vital factor in the construction industry—electrical contracting. And all the time such practices are going far toward destroying the good work that is being done by others in the electrical industry in selling the electrical idea to the public.

The Difference Explained

Recently an electrical man was glibly talking about the electrical industry to a group of nonelectrical men—glibly because he felt sure of his ground, believing every word that escaped his lips would be taken as gospel truth by his hearers who were supposed to be unacquainted with the industry as an industry.

After expounding the position of the manufacturer, he explained the function of the central station. He interpreted nobly the work of the jobber. And finally and lastly he got down to discussing the apparently humble role of the contractor-dealer—"or *electragist* as some prefer to call him," to use his own words.

And right there is where he spilled the beans. A contractor-dealer cannot be called an electragist arbitrarily. Let us all remember that. As has been iterated but should be iterated and reiterated until people in the remotest parts of the world know the difference, an electragist is more than an electrical contractor—infinitely more than an electrician.

Take the case of the realtor, an electragist in the real estate field. It will be seen by the article printed on another page of this issue that the application of the words realtor and electragist is very similar in the two fields. The realtor is a professional, a technical expert. That cannot be said of a curbstoner, a basket contractor, an office in the hat electrician.

It *should* be said of the contractor-dealer that uses only high grade and standardized materials; that does quality work in every detail of the job; that services in a dependable and trustworthy manner; that upholds and enforces the rules of the National Electrical Code; that competes fairly; that seeks to promote coöperative association work—furthermore, one who is a member of the International Association, and thus qualifies to become an electragist.

As the service rendered by a realtor is honest, intelligent and responsible, so should be characterized the service

rendered by an electragist, coupled with the assurance of safety and satisfaction.

It is every electragist's duty to tell the public in unmistakable terms the qualifications necessary before the electrical contractor-dealer may become privileged to adopt the name electragist. If that is done the time will soon come when not even a man of the industry can trick a lay audience into believing that the two terms are one and the same thing.

Get Together Meetings

In helping to promote the spirit of harmony and good fellowship, we must get acquainted with the other fellow. Find out who he is, what are his faults and virtues, and how he gets along. Either we can help him, or he can help us—and both parties benefit by the transaction either way.

In naming the objects for which the Association of Electragists is formed, the following clause is to be found in the amended Constitution:

> *To arrange for and promote meetings of Electragists in the various sections of the country. Such meetings to be arranged to cover any given territory that is easy of access from the point where the meeting is held.*

Business meetings these will be, to be sure, as the problems of the electragist will be taken up and the business of electragy will be discussed. But the main purpose will be to get acquainted.

"Make it thy business to know thyself," said Cervantes. Perhaps the best way to "Know thyself," is to know others. The other man in the same line of work is likely to see us pretty clearly. He can point out our shortcomings, show us our errors, and see us as we are.

So let us "arrange for and promote meetings," in order to get acquainted. Let us get the other fellow's viewpoint. Let us learn to know ourselves by knowing others. Let us get together for mutual good.

Ready to Electrify

It is reported on good authority that central stations are now spending and will continue to spend for the next few years a tremendous amount for the development of that branch of the electrical industry. It is estimated that for every dollar which the power company spends for development, the expenditure of those who make use of this power is an average of eight dollars in the purchase of appliances and appurtenances for household and commercial use.

The electrical trade is urged to cater to the consumer, but what electragists should fix in mind is consideration of the *possible* consumer. A consumer is one who has been sold and while by additional sales talk a consumer may become one who brings up the profit average, the main selling energy should now be centered on the possible or prospective consumer. The industry is at a crucial point where the widening of its path is the keynote.

Electragists as a body are progressive, but the scope of progression in their trade development hardly seems to have been realized by goodly numbers. The blood is sluggish in those who have failed to see that the growth of electragy has practically just taken root and that the enormous field wherein their endeavors may spread is really limited.

To call it a field is in reality a weak expression. No other industry caters to, harnesses, and dispenses the great elements—earth, sky and water, expressed in heat, cold and moisture.

Electricity is the most wonderful game that science has developed for mankind. It is something to play with, it is something to work with. To those who play the game fairly it spells endless prosperity.

Therefore the ideas of the Joint Committee for Business Development to electrify America is the greatest expression of suggested improvements for its physical and economical welfare that this country has had offered to it in its history. Nothing since the cataclysm which interrupted a normal business aim possibly could be so widespread and so sure to arouse the entire nation.

An Optimist Plus

The true optimist is one who advocates the doctrine that everything is for the best and of the best. He always praises and never condemns. If anything in its present state of existence is not all right, he endeavors to make it so.

William J. Shore is an optimist. He is a New York electrical contractor who sees only the good in that profession. He is successful in business; has ably filled the highest office in the largest local organization of electrical contractors in the world; and his wise counsel is sought in the industry's organization activities.

On other pages he submits evidence to prove that the business of electragy is not so bad as it usually is painted—which indeed may be considered extremely optimistic by those who are accustomed to looking at the picture through dark blue glasses.

Mr. Shore scores many points in favor of his chosen profession, and brings us around to the belief that it would profit us all to cultivate optimism. In a phrase, this is the big thought that results from a reading of his excellent paper: Be a Booster!

The Code Committee

It is the desire of A. Penn Denton, chairman of the Code Committee of the Association of Electragists, that all members of that organization recognize the value of the National Electrical Code to them as individuals. To that end the bulletin issued by the Electrical Committee of the National Fire Protection Association, which contains the proposed changes in the 1923 Code, is being sent to secretaries of local organizations and other officers of state associations, with an urgent request to review the Code revisions at their meetings.

Mr. Denton's purpose is to enlist the services of members throughout the country to take an active part in his committee activities. He believes such action will result in an increased interest in this important subject, and tend toward a closer contact with other branches of the electrical industry.

It is desirable that every group organization appoint a Code committee, the chairman of which will communicate with Mr. Denton, who from time to time will issue bulletins to such committees, discussing Code affairs.

It is hoped that all local and state officers will at once act upon these suggestions and correspond with A. Penn Denton, 17th and Oak Streets, Kansas City, Missouri.

The Awakening of Mr. Moss---II

By Thomas F. Chantler

Storyized From the Play Staged and Produced by the Union Gas and Electric Company at the Cincinnati Convention

"I do hope he gets his eyes opened!" Amy Moss murmured to herself as she watched her husband and Bob Sterling starting off the next morning to the train that would carry them to the convention city. Her fingers still tingled from the vigorous grip Sterling had given her, and her lips tasted of tobacco from her husband's fervent kiss. But her thoughts, as she watched them out of sight, revolved around that cheerful dinner party the night before and of how Moss had seemed to profit by his contact with Sterling. When she turned back into the store to help Lucifer complete his task of redding up, her hopes were running high. "Bob will do him lots of good," she assured herself.

Bob Sterling played well indeed his part of the inspiring—and inspired—friend. His regard for Moss was alone sufficient to cause him to use his best efforts to "rib him up," as he picturesquely phrased it. But his recollection of the tearfully and prayerfully whispered hopes that Amy had confided to him supplied an incentive that made his influence a real factor in the fortunes of Charlie Moss. In fact, when Moss parted from him in the convention city to follow the directions given him for reaching the home of his cousin he was galvanized to a pitch of action that carried him along so rapidly that he found himself exchanging greetings with Ed Brown while his friend's parting words were yet ringing in his ears.

But Ed Brown's wife soon turned his thoughts into other and more familiar channels. "Why, Charlie!" she exclaimed, having followed her husband to the door. "We're so glad to see you! And Amy and the children—how are they? Why didn't she come with you?" she demanded, pausing for breath.

"Well, to tell the truth, Edith," he answered, "I had no intention of coming myself until a friend came and rooted me out. Amy," he continued, somewhat confusedly, "she's staying home to mind the store; some one had to, you know. By the way," he added, feeling in his pocket for a photograph which he handed to her with a feeling of relief at having got past her first question so easily, " there's her picture. Taken last summer; it speaks for itself," he concluded, speaking in a defensive tone, as though in reply to an accusation of some sort.

He fought against the realization that their verdict, if unfavorable, would convey to his understanding their unconscious criticism of his care of her. Bob Sterling had found that same cleft in his armor and the wound was still raw. So it was with a great sense of selfrighteousness that he heard them declare that "Amy looked fine and not one day older than when they had last seen her."

He placed the picture back in his pocket with a feeling of thankfulness—an emotion he was conscious of without comprehending its real significance. More than ever he longed to make good, although secretly perplexed regarding ways and means. But such things as ways and means are but trifling obstacles to him whom Destiny undertakes to lead.

Mrs. Brown had excused herself to go to prepare Moss' room for him. The two men were smoking contentedly and gossiping between puffs. The door bell sounded in that discreetly insistent manner that betokens a practiced finger on the button. "More visitors, Ed?" inquired Moss, as though fearing that he might be in the way.

"No indeed, Charlie," assured his host. "I think that's the fellow from the lighting company. He telephoned a while ago. Wants me to wire this house. You stay put," he added reassuringly. "It won't take me long to get rid of that bird," he declared, proceeding to the door to fulfill that promise.

Left thus alone, Moss employed his time by studying his wife's picture. He might have learned much about himself, could he have had a detached view of himself just then. What was there about that innocent bit of pasteboard to cause him to scowl so fiercely? And why did he grip it so securely, as though expecting some unseen force to steal it away? "I'll make good, dammit! See if I don't," he challenged to the picture. "Just wait. You'll be proud of me yet; everything's coming out all right," he whispered earnestly, making haste to conceal the picture as Brown reentered the room followed by a heavy set fellow radiating an atmosphere of smiling aggressiveness—the man from the lighting company, quite evidently.

"This is my cousin, Mr. Moss," grunted Ed Brown, without managing to display much cordiality. "What'd you say your name was?"

"Right, Tommy Right," supplied the salesman, shaking Moss' hand heartily. "Happy to meet you. I'm in the electrical business. Come to offer Mr. Brown the comforts of electricity in this house. How do you do, too, Mrs. Brown," he said to her as she entered.

Somewhat to her husband's astonishment, Mrs. Brown smilingly acknowledged the salutation.

"Is Mr. Right a friend of yours?" demanded Brown, too surprised to care about being tactful.

"Oh, Mr. Right stopped here the other day when he saw Mrs. Jones about wiring her house. But I told him he'd have to see you, Ed," she assured him. But her manner of saying it rather gave one the impression that despite her having left the matter for him to decide, she would be quite capable of wagering on the outcome.

Moss hunched forward in his chair expectantly, his mind keen to grasp any tricks of the craft that he could employ in his own work.

"Huh!" grunted Brown, sensing just enough of his wife's diplomacy to make him antagonistic. "You knew we didn't want to wire this house. What's your proposition?" he inquired of Right. His manner seemed to say, "The quicker you offer me something, the sooner I can say no, and get this business over with."

But to Moss' secret astonishment, the salesman gave no evidence of fighting a losing battle. He placed a chair for Mrs. Brown; looked about as though to see that the two men were comfortable; and then got under way with his selling as expertly as your skilled driver changes gears and shoots his car ahead without a jar.

"I'm glad you asked me that, Mr. Brown," he said, seeming also to include the others by his friendly glance around as he said it. "That question convinces me that I'm dealing with a

man who handles business matters in a businesslike way—you plan to *hear* my proposition *first*, and make up your mind about it later. That's good enough for me, and I'm sure you will say the same about my proposition—that it's good enough for you."

The adroitness of that beginning was an eye opener to Moss. The salesman that was in him was quick to note how Brown had been manoeuvered into a position where he must hear the story out before deciding, in order to avoid laying himself open to the charge of rendering a verdict in advance of having heard the evidence.

He noted then how the item of cost sideration too soon and perhaps block- was prevented from coming up for con- ing the sale, by Right's assurance that they could have the house wired and enjoy electric service for a month be- fore having to make any payment, and that if it did not do all that he promised for it that the installation would be taken out, and no charge made. He thought of some of his own bungling selling efforts and was ashamed.

Despite his original attitude of an- tagonism, Brown was visibly thawing. Even Moss found himself hearing as though for the first time about the won- ders and comforts of electrical service; he nodded approvingly when Right made a particularly telling point, root- ing inwardly for him to win. He wanted to take an active part in the selling and was conscious of a sympathetic feeling for his coworker.

"I'm paying enough for gas as it is, without getting 'lectric bills too," re- monstrated Brown, imbedding himself the more firmly on the hook by his very struggles to squirm free.

"But, Mr. Brown," smiled Right, "for what else could you spend the same small amount of money and get as much solid comfort in your home as elec- tricity provides? You take a pride in your home, I can see that. Besides, I'm sure that you want to make things as comfortable as you can for Mrs. Brown, don't you?"

"Yes, I suppose I do," somewhat re- luctantly agreed Brown, not knowing how else to get out of the corner into which Right's question had put him. "Anyway, my cousin," indicating Moss, "is here tonight and I haven't got time to argue about it," he concluded with an air of wishing to terminate the in- terview.

"Don't mind me, Ed," ejaculated Moss. Poor as he was, he would almost have been willing to pay for the in- stallation himself, rather than to have had that sale stopped short of its logical conclusion.

An encouraging but almost imper- ceptible nod from Mrs. Brown started the salesman off again, without giving Brown a chance to say more. A copy of the estimate left with Mrs. Brown on his first visit was produced, and the salesman soon had Brown occupied with a discussion of the number of outlets per room, and other such practical de- tails. Always ready with a convincing answer, turning every objection into a point in his favor—and into a boom- erang for Brown—the salesman skill- fully worked his case along to the point where he'd be safe in trying to close.

Moss perhaps had seen equally skill- ful selling tactics displayed by some of the salesmen who sold to him upon occasion. But in those instances he had been the subject operated upon, and by the very nature of things was in- capable of noting how it was done. Besides, his mind had not then been open to enlightenment. But now he did want to learn and made full use of his splendid opportunity, while in- wardly castigating himself for having been so long asleep. So completely was he himself in sympathy with the salesman's arguments that he scarcely could credit his ears when he heard Brown say, "Well, I'll think it over. See me later."

"What is there to think over, Mr. Brown?" countered the salesman, watching him closely. "You can of course think over it for years if you elect to, but you'll never know any more about it than you do this minute—or can find out now. You must have elec- tricity in your home and enjoy its bene- fits, if you are to really understand what it will do for you. Just write your name here, on this blank," he said ex- pectantly, holding his fountain pen out towards him invitingly, and turning the contract to just the right angle.

"What do you say, Edith?" demand- ed Brown, trying to cover his weakness in having taken hold of the pen.

Moss sat back, sighing inwardly in great content. He had witnessed an exciting and, to him, inspiring business drama that had worked miracles in stiffening his resolve. He wanted now only to be alone with his thoughts, to enjoy the feeling of confidence that welled up within him.

"Have it done, Ed," he heard himself saying. "You only live once."

Finding only encouragement in his wife's smile, Brown rose to the situa- tion gracefully, signing his name with a great flourish. "There!" he sighed complacently. "That's done. Say," he demanded of Right, "when will you have this job done?"

"I'll let you know tomorrow," an- swered Right, pocketing the contract and shaking hands all around. "I'll have to find out first how much work is ahead of your job. But we'll get you fixed up very soon, you can de- pend upon that, he assured, as he made for the door.

"Ed," declared Moss oracularly, when the door had closed on Right, "that man's a real salesman. He sold me too, and I'm going to wire our house for Amy as soon as I get home. He's some salesman!"

"Do you mean to sit there, Charlie Moss, and tell me that you aren't even using 'lectricity in your own home?" demanded Brown. "And you an Elec- tragist!"

"Yes, I know," confessed Moss shame- facedly. "I've been asleep, but by Gad! I'm awake now. You just wait and see. Take it from me, Ed, electric light is not the only light I've been in need of."

"What'd'y' mean?" demanded Brown, preparing to show Moss to his room.

"I can't explain now," evaded Moss. "But I've been all kinds of a fool, and it has taken a lot of things to wake me up. But, say," he demanded, "a while ago I heard you mention this and I've wanted to ask you. What is—an—Electragist? You called me that."

"Holy smokes!" shouted Brown, gaz- ing at him in open mouthed astonish- ment. "You don't know? Aren't you a member of your own association? Why, man, an electragist is an electrical dealer who's a member of the Inter- national Association—who's a live wire like that son of a gun, Right. He's a humdinger, right."

"Ed," said Moss, as he followed his host upstairs. "I like that word,—Electragist. I'm going to be a hum- dinger myself from now on."

"Sure you are," agreed Brown, with- out quite knowing what it was all about. "Good night and pleasant dreams," he said, indicating to Moss where to find matches if he should want them.

But Charlie Moss' dreams were not pleasant, far from that. For a long time he could not get to sleep at all; his thoughts were running at breakneck speed, and sleep was slow in coming. The dreams that came with sleep left

him sitting bolt upright in bed, his brow moist with cold sweat. "Thank God!" he exclaimed, when fully convinced that the weight he had been struggling against existed only as a dream.

Amy and the children seemed to be perched precariously atop of a gigantic hourglass. The glass, swaying dangerously, rested upon a slimy substance into which it was slowly but remorselessly disappearing in unison with the trickling away of the sand in the glass. Great loathsome creatures with dull eyes that never blinked struggled to scale the sides of the glass, shooting out their wickedly forked tongues, and falling back into the ooze again with a muffled thud.

He was dallying on the bank of solid ground that ringed this inferno weaving a chain of daisies to throw to his loved ones in order that they might slide to safety. He knew that he should hurry and tried, struggling fiercely to complete his task. But the birds were singing about him, the sun was soothing in its relaxing warmth; his hands would not twine the daisies together so that they would hold.

Down, down, down sank the glass. Now his youngest child had disappeared beneath the slime with one of the monsters perched upon her head. And then, just as Amy, herself, seemed sinking from sight, he would waken to find himself shaking like a leaf, only to endure some other version of the same general theme when sleep gripped him again. Always he had his chance but tarried too long in taking advantage of it. All that he loved and held dear would vanish before his eyes.

"Wait! Wait!"—twice he wakened with the realization that he had been imploring for more time. When morning came he was like a man possessed by devils of insensate ambition. He wanted only to get to the convention and learn of the means by which other men were getting on in the world. He made good and active use of his opportunities when he did.

"By gad!" exploded one old timer who had been attending conventions for years before Charlie Moss had even hung out his shingle, "if that chap has overlooked a single trick for getting good out of this occasion I haven't noticed it. He's attended every meeting; read everything he could lay his hands on; buzzed everybody he could about their way of doing things; and last night I heard him asking how he should go about it to procure a report of all the speeches. He's a humdinger, all right!"

And Charlie Moss was happy in his well doing; the convention had been a revelation to him in many ways. Man after man he had met that he knew he equalled in his knowledge of technical things but who nevertheless was succeeding beyond anything he had dared hope for. Now he knew why. He was sure he could do as well! it was all a question of hustle and good business sense.

"Let's get well up front," he urged Bob Sterling, "as they hurriedly sought seats for a session that promised to be especially interesting to him because it would deal with matters of selling. "I don't want to miss any of this"—in his selfabsorption he spoke louder than he realized, and the chairman, who was just bringing the meeting to order, rapped sharply with his gavel for silence, violating it himself the while, by expressing *sotto voce* his displeasure at the interruption. But Moss was destined to set the chairman's plans further awry before the session was over.

"Mr. Moss. Telegram for Mr. Moss. Mr. Moss—Telegram for Mr. Moss." A cherublike bell boy on the staff of the hotel that housed the convention, stretched his diminutive stature to the fullest, trying desperately to locate his man. He had a mission to perform and telegrams were telegrams, more important in his scheme of things than any mere convention—"Mr. Moss—Mr. Moss—Telegram for Mr. Moss."

"Crash! Crash!! Crash!!!"—went the chairman's gavel. He glared at the innocent Moss, with a glance calculated to obliterate him utterly.

"That's for you—boy's got a telegram for you," whispered Sterling, nudging the hapless Moss out of his reverie. He was thinking at the moment of all he wanted to do for Amy, and he connected the telegram with her intuitively.

"Mr. Moss. Telegram for— —"

"Here boy, here. Give me that telegram," he shouted, springing to his feet and almost upsetting those nearest to him by his efforts to reach the boy. "I'm Mr. Moss—give it to me."

The Chairman pounded and spluttered; the speaker stopped speaking and glared; those about Moss expressed themselves variously each according to his temperament. But Moss was oblivious to it all. His hands trembled as he ripped open the envelope and smoothed out the yellow sheet, studying it slowly and forming the words silently with his lips. Only when Sterling twitched his coat did he awake to the realization that he was still standing and that all eyes were upon him. He sat down hurriedly.

What the next speaker said conveyed nothing to Moss; he was conscious at times of a man's voice speaking slowly, a rythmic tattoo of sounds against his ear drums, punctuated by occasional pauses and hand clapping. But the loud applause that followed when the speaker had done acted somehow to galvanize him into instant action. He sprang up and waved his hand to attract the speaker's attention.

"Mr. Chairman. Mr. Chairman—" he shouted. And then, when that much-harassed individual had recognized him by glaring belligerently—"Mr. Chairman, if you will let me, I have something on my mind, I've got to spill. I only want a couple of minutes," he said coaxingly.

"You've already taken more than that much of the time of this meeting," snapped the irate Chairman. "However—," finishing his thought with a gesture of resignation, and then rapping viciously for attention. "Mr. Moss, ladies and gentlemen—Mr. Moss, of Averagetown, has the floor."

Never before had Charlie Moss addressed an audience, but Sterling and one or two others had urged him to stand on his chair. And there he was, the target for all eyes. But his situation was too tragic, his thoughts too imperative to permit such considerations to deter him. He must speak—speak or burst. He knew it.

"Mr. Chairman, ladies and gentlemen," he began in a voice that sounded strange in his ears. "I'd be ashamed to call myself a man if I went away from this meeting without saying what's in my heart." His manner was fraught with a deadly sort of enthusiasm that commanded both sympathy and attention. "For eight years," he continued, "I've been in the electrical business in Averagetown—always just about two jumps ahead of the sheriff. But I want to say, here and now, that it's a good little town, as good as any in this country. I used to call it a one-horse town, but I've discovered that it is a regular ten ton truck—and I'm only the exhaust." He knew that the two minutes he had asked for had already been exceeded, but he didn't care. These people must be told, and the Chairman could go hang.

"I'll tell you good folk how little I've amounted to," he went on. "Back in that town there's a little woman as fine as they make 'em; she stuck by me for seven years—seven years—while I made *excuses*, instead of money. But she's reached her limit, I guess, and I don't blame her," looking boldly about him, as though forbidding them all to criticize her. "Anyway, I just got a telegram from her, and here's what she says." He realized now that forty chairman could not stop him from having his say out; so he waved the telegram dramatically to attract the attention of the audience.

"'Charlie Moss,'" he read. "That's me,—moss all over, back and everywhere. 'Have taken the children home to Mother's. Will stay there until you can make me proud of you. Amy.'" His audience was in sympathy with him now; he could feel their support in the very air. He stood silent for a moment enjoying the strange feeling of relief that had come to him with the reading of that telegram, the heart ease of one who has confessed his sins.

"Amy is my wife, friends. And she's a great girl too. But that's not all. A man owes something to his family, his business and his community. That's all I've been doing—owing. Now—" he paused as though to add emphasis to his promise. "I'm going to *pay up*. This convention has opened my eyes; I'm going back to Averagetown and make good."

"Wait, wait" he shouted, holding up his hand to command silence. "There's one other thing. My trouble has been that I wanted the other fellow to come all the way, to do all the cooperating. But I see things differently now. Now I know that if I go part of the way and show the right spirit—why! there'll be lots of good fellows come out and meet me. So all I ask you to do, friends, is to keep an eye on Charlie Moss and wish him the best of luck."

Waiting not for the applause, which, when it came, fairly shook the building, he bade a hurried good bye to Sterling and dashed from the room. He thought only to get back to Averagetown. "Work! That's what he wanted to do —to work, and work, and work!"

It is the Best Business After All

By William J. Shore

In the Words of Edward Everett Hale, Look Up and Not Down; Out and Not In; Forward and Not Back; and Lend a Hand

Every profession and every business has its detractors and has its boosters. Members in a profession and men in various lines of business activity are always the most active in telling how the profession or business they are in is the worst possible one on earth, and always envying and pointing out successful men in other lines of work which to their minds are far more profitable than the work they are doing. Have you ever heard men say: "I would never let my son go into my line of business—the work is too hard and the remuneration is too small. I am going to make him go into ————," mentioning any profession not related to his own, "where he can make a decent living and enjoy life."

It's the same old story that's been told long ago—"How charming and attractive the country looks on the other side of the hills!"

During the past few years it has been the practise for every electrical contractor who could write, who could talk, or who could draw—or who could do anything else—to take shots at the electrical contracting business. Something like playing duck on the rock, where in this case the electrical contracting business is the duck—or the goat. Witness all these headings—they are seen in every one of our trade papers:

Why Isn't the Contractor Making Money?
What's the Matter With the Contracting Business?
Insufficient Margins from the Manufacturer.
Unfair Competition from the Jobber.
Unfair Competition from Curbstoners.
Unfair Competition from Carpet Bag Contractors.
Is the Electric Contracting Business a Joke?
The Ills of the Electric Contracting Business.
Cut Throat Competition Among the Biggest Electrical Contractors.

I warrant you cannot pick up one trade paper without finding a discussion of some one of the above subjects and all of them handled in the same fashion.

We might joke about it after the style of the now popular Coué fad and say, "Day by day, in every way, our electrical contracting business is getting better and better."

Day by day, in every way, our electrical contracting business is getting better and better.

And while I write this down in a light vein, it does seem to me that if every electrical contractor would sit down seriously and repeat that phrase three times a day, his business truly would get better.

Right down deep in my heart I know there is nothing the matter with the business. Absolutely nothing. The whole thing that is wrong is us, we, ourselves. We've just got the wrong point of view on the entire business. We are very much like children in that way and insist on blaming everything on conditions and the business—and the weather, and Wall Street, and European affairs, and right down at the bottom of the whole thing, the trouble is us—we—ourselves. We are the ones that are to blame. Every one of us. We have got to stop thinking in terms of gloom, depression and hopelessness. We have got to turn about and realize that we, us, and ourselves only, are to blame for the business as it is today. It's very easy to say, "Oh, I'm all right—the fellow around the corner is the one that's doing all this price cutting and making it hard for us to do business."

The conditions in our line of work are not one bit worse than they are in every other line of work.

Let us just stop for a moment and take stock of our business—some of the good things that belong to it.

It is an interesting line of work, and all of us are fascinated with the marvel of it. In fact, that was the one reason most of us went into it. I'll gamble that very few of us ever considered it from the money making standpoint. Indeed not—we went into it because we liked it. It interested us more than anything else ever did as a business.

Well now, that's a pretty good thing to say about any kind of business, isn't it? It's interesting, and not only that —it is changing so rapidly. You know it is only a baby compared to other lines of work, such as banking, law, and medicine. Stuff you installed ten years ago is out of date; it's old, and

begins to smell of burnt rubber. Switchboards installed thirty years ago are pulled out and thrown into the cellar, the junk pile, or a museum.

It's a clean line of work. Not much like the criminal lawyer's profession whose time is spent with human misfits, or the doctor who spends most of his energy and time on folks who have sickness and diseases.

It's a new profession. Most of the men are young, alert, and wide awake, up and going. It isn't hidebound with musty traditions, it is not controlled by one or two large syndicates or corporations. There are very few old men in our line of work who have to die before we can get a chance to move up and on.

Different Points of Interest

Now from the other angles, it presents different points of interest.

There is no other line of business that can be entered upon with so little capital. You don't need a fabulous sum of money to go into the electrical contracting business. That's the reason I'm in it, and no doubt that's the reason why so many of you are in it—and that's the reason why there are so many more coming into it every day. Day by day, we're getting more and more contractors in our business. And I'll venture to say that a great number of the successful contractors of today started in just the same fashion. Under the laws of our country, the great U. S. A., there is nothing to stop any young fellow from going into the contracting business. And the jobber will help him along if he exhibits right aims and purposes, for who can tell, someday he may be a big contractor and he'll never forget the jobber who gave him his first goods on credit.

There is no use of complaining about the curbstoner, the basket contractor, or the carpet bag contractor, because he will always be with us. Just the same as there are new young lawyers, new young doctors, and new engineers willing to do work for nothing to get started in life. It is the same in every line of work where there is little or no capital required to go into business. It is a condition that cannot be overcome by complaining about it. No, we overcome it by going around it.

We have money in the bank, we can advertise, we have many old customers, we can handle bigger jobs, and we have ever so many advantages over the curbstoner that it seems sort of foolish to fear him. Besides, he takes a lot of cheap business and does a lot of cheap work that a decent, respectable contractor ought to avoid. He should not want to take it because it would affect not only his pocketbook but his reputation.

Taking it by and large, the application of a little sales effort and a cheerful outlook on things would serve far better than to complain of the curbstoner. He will either go broke or else will develop into a regular contractor like us fellows, and in a short time will begin to complain about curbstoners and basket contractors himself. It's the same all over in every line of business.

As for the Curbstoner

And while we are on this particular subject of the curbstoner, do most of us realize what he is and why he goes into business for himself? He usually is an electrician who has been working for one of us contractors on and off for a period of years. He is a good man and knows his work. There comes a time, business is slack—we lay him off. He can't find work with any of the other contractors, and he decides then and there: "I'll go into business for myself."

You all know how it is; most of us have been through the mill ourselves. There is no way to overcome it. It holds true in every other business and is a perfectly natural event. Not only that, but it is essential to the growth of our business. There's no use complaining about it, in any event, so why waste time?

Among the most valuable features of our business are the various inspection boards that have to pass upon the materials we use and the fashion in which they are assembled into an electric wiring job. These inspection bureaus usually are local city departments, the central stations, and the fire underwriters.

Probably as some of the contractors read this they will say, "Bill Shore's gone crazy." He has, but not in the way they think he has. It is true that it does take time and effort to secure inspections. It is true that such inspections cost money. It is true that rulings at times seem hard and severe. I grant all that. But one big and outstanding consideration many times more than offsets the minor hardships enumerated.

These organizations set a definite and high standard of electrical workmanship and materials. I repeat, they set a high standard of electrical workmanship and materials. Perhaps you don't entirely realize what that means to us. Just think what would happen to our business if these boards were suddenly wiped out of existence. Where No. 14 SBRC wire is now used, under the stress and strain of competition cotton covered bell wire would be employed. Just imagine how electric installation work would degenerate.

I have seen samples of that abroad, where in some of the finest hotels small cotton covered wire would be run around walls and ceilings; where twisted lamp cord was standard for all kinds of wiring; where switches were so poorly constructed that they would fall apart if you blew your breath upon them. And when I came back here to the U. S. A. and and saw the splendid fashion in which electrical work was done, it was a rare treat indeed.

These inspection boards are responsible for this—not the contractors—and we owe them a debt of gratitude for their firm stand in insisting on high standards. We more than anyone else ought to do all we can to help them along. It's for the best interests not only of our clients but ourselves.

That is one of the good features of our business and we ought all of us to appreciate it to the utmost.

Compared with Manufacturing

Quite often I have been tempted to enter a manufacturing business in the hopes of making more money. But I would reflect a little while and compare the two. What to make?—What to sell? No matter what article I thought of, there were more factories in existence than necessary. It would take a lot of capital, and the capital would be completely tied up in machinery, raw material, and finished stock.

Competition was severe; it would require considerable additional capital to get started, and then after having got started, would I make any more money than I do now? I don't think so. With our contracting business, if work is slow and times are hard we can take it easy and not lose much. If we had a factory it would be cheaper to take work at a loss and a substantial loss at that, just so the factory wouldn't be shut down and be worthless by the time we were ready to start again.

Then consider the money manufacturers lose due to price fluctuations in materials. Consider the chances manufacturers take that make articles that

are dependent on the whims and moods of Dame Fashion. They either make a fortune or else go broke.

Our business has nothing like that in it. If we run it right we can tell from day to day just where we stand. We don't often make a fortune, but on the other hand we seldom go broke.

We always have with us the believed bugbear of business—competition. When you listen to a group of contractors that get together for a friendly game—this is what you hear.

Smith: I understand A took the Jones job for $80,000, my cost on that was $100,000, how does he do it?

Brown: I understand B took the Jenkins job for $50,000, my cost on that was $60,000, how does he do it?

I won't tell you how they do it, but I will say that if you heard plumbers talk they would say the same thing. If you heard carpenters talk they would say the same thing. If you heard boxmakers talk they would say the same thing.

It's the same all over in every business. So therefore, from that standpoint alone, our business does not compare unfavorably with others.

A few well chosen words of conclusion now would probably be welcome.

We should realize that our business, as it is, is but a reflection of our own personalities, habits, and customs. The business today is what the contractors of ten or fifteen years ago have made it. If it has faults, and I know it has many, it is due only to lack of training and discipline in its earlier days. It's just like Topsy. It's a neglected child. And none of us profess to be pleased to be related to it in any way whatsoever.

A Lesson from the Bible

In the Bible it says: "The sins of the fathers shall be visited upon the children," and that is just what has happened to our business today. The business is suffering from the lack of good and sound business policies, that should govern the conduct of any business. And the adoption of those good and high standards is not only possible, but is extremely practical if we, us, and ourselves really want to apply them. Be electragists in every sense of the word! By conducting our business according to good business principles and behaving ourselves as good business men—as electragists—we, us, and ourselves can in a comparatively short time, a matter of a few years, establish our business on a higher plane.

A well known economist and statistician once made a survey of every kind of business with the view of finding out which were the most profitable and remunerative. The results of this investigation were intensely interesting. As I recall it he found that in every line of work there were a few who had made a great deal of money directly or indirectly in their line of work, a large majority who were making a fair living, and a great many who were just keeping afloat.

This will recall to every contractor who reads this article some few of his competitors who are well fixed financially. It will recall a great many who are earning a good comfortable living, like most of us are, and a few who are just getting by. It is exactly the same in every other line of work.

I personally know of four electrical contractors in my city who have retired from business. They made their money in the electrical contracting business. And the peculiar phase of the matter is that not one of them was known for the large volume of business done nor for taking large construction contracts. Their business ran between fifty and one hundred thousand dollars per annum, which as most of us know can be done by a moderately small organization. It would be well worthwhile to get the stories of each of these men. We would most likely learn something—or perhaps we might say, "Why we knew all of that—only we did not apply it."

Some of the most active and most violent detractors of our business have been those who started with nothing and have been successful in building up a very profitable and paying business.

I feel that it is time to call a halt to this policy of complaining, of whining, of detracting, of squealing, and of apologizing for the business. It's a good business and a profitable one, only it must be run in the right fashion and must not be abused.

Let us stand on both feet, throw out our chest, hold our head erect, and tell all the world what a splendid business we're in and how proud we are of it. And more than that, let's act up to it. Let us repeat to ourselves over and over again: "Day by day, in every way, our business is getting better and better." And then watch us go.

When Not to Extend Credit

By V. G. Fullman

Sales Manager of Steel City Electric Company Says Applicants Must Have Proper Business Knowledge Before They Can Qualify

The average man believes in the policy of a square deal but a great many do not live up to their belief, or practice what they preach. Failure to do so is usually blamed on imaginary difficulties or conditions. Numerous excuses—not reasons—can always be offered for sidestepping individual personal responsibility. It is always easier to go along with the crowd than to establish a policy that is fundamentally right and to stick to it. On the other hand we must all suffer the consequences when we choose to take the easy way and fail to do our share or more than our share in the work of raising standards and influencing others to coöperate in an educational movement for the common good.

The electrical industry is comparatively young and this seems to be the only excuse for the prevalence of practices and conditions which have been eliminated from some of the older industries.

It is generally recognized that it is too easy for socalled electrical contractors to obtain credit. According to a recent survey there are almost twenty thousand contractors and contractor-dealers in the United States. The average electrical supply jobber has from one thousand to two thousand credit customers of this class on his books. A dangerously large proportion of these customers are designated by Credit Men as moral risks. In addition to this list of credit customers each jobber has a considerable number of c. o. d. customers and as a result the Electrical Credit Association frequently publishes a list of C. O. D. Refusals in order to protect members that may receive orders from such concerns.

These moral risk and C. O. D. cus-

tomers are usually designated as curbstoners, basket contractors, bootleggers, hip pocket contractors, etc. They usually buy the cheapest grades of material and skimp the jobs in every possible way, resulting in poor or defective installations and the casting of discredit on the electrical industry. They usually try to see how cheap they can do the work instead of making each installation as complete and dependable as possible. They know little or nothing of estimating, overhead, working capital, accounting, etc., and do nothing to encourage the idea of more convenience outlets. They keep their business in their hats and that is the closest it ever gets to their brains, which seem to be thoroughly insulated against all progressive ideas or ideals.

Business Knowledge Necessary

Very frequently an efficient wireman, having no knowledge of business fundamentals, decides to go into business for himself and succeeds in getting credit from one jobber or more than one. He soon finds that an expert knowledge of wiring construction is only one of the requirements for the successful conduct of a business. His success as a wireman is hopelessly handicapped by his lack of knowledge of all other essentials necessary for success. In the majority of cases he falls into the slow pay class and fails to make as much money as he did when working as a wireman. Credit men fail seriously in their duty when they neglect to inform such applicants for credit of all the qualifications necessary for the conduct of a successful enterprise.

During the recent depression there may have been some justification for jobbers to extend credit to anybody and everybody, but now that business is again on the upgrade there should be a determined effort on the part of all jobbers to weed out undesirable customers and to be more prudent in the extension of credit.

The electragist is the backbone of the electrical industry and he is entitled to the support and protection of the manufacturers and jobbers.

Sales managers and credit managers have a real responsibility to the electragist whether large or small that is operating his business along safe conservative lines, and that is trying to make dependable installations and to establish a real business. Such concerns must be given encouragement and protection from the unfair competition of price cutting curbstoners and other undesirables in the business.

Every credit manager worthy of the name in the broadest sense should refuse to o. k. orders unless the customer or applicant for credit properly qualifies according to approved standards. Credit should be extended only to electragists and reputable contractor-dearers that have an accounting system as to a basis for estimating and that allow a sufficient margain of profit on each job to enable them to pay their bills promptly and to set up a reserve fund for working capital

All the electragists should be encouraged to borrow capital from the bank

V. G. Fullman

to carry them over on large contracts so that their credit standing can be maintained, and to avoid the necessity of the jobbers performing the role of the banker. Electragists should be assisted in securing necessary loans from the bank by the credit men. The recommendation of the credit man will usually make it possible to secure a loan which otherwise might be denied.

This plan enables the electragist to save considerable money on cash discounts, thus increasing net profits. The jobber is also greatly benefited by securing a quick turnover on accounts receivable which means a greater net profit.

Cash sales to other than electragists should be discouraged, as the net results are the same as though credit was extended. The electragist is bound to suffer in either case from the unfair competition set up by this class of buyers.

Statistics are not available but it is extremely doubtful that the gross volume of business is increased by the indiscriminate sale of merchandise to anybody and everybody engaged in the electrical industry. And when the credit losses are taken into consideration it seems quite certain that the net profits are not increased by such a policy.

If greater discrimination is used in extending credit there will be more need for real credit men and less need for collection men.

In addition to the coöperation of sales and credit managers the help of advertising managers should be enlisted to correct or eliminate the unsatisfactory conditions which prevail. The advertising men can help by sending catalogs and advertising matter only to electragists as designated by the credit departments. This will effect a tremendous reduction in the cost of advertising and will result in a greater financial return on the money that is spent for advertising by both manufacturers and jobbers.

This leads up to a recommendation that I have previously made; namely that the names in the monthly bulletin or blue book be arranged in alphabetical order by states and cities or towns. If the names are arranged in this way it will be a simple matter to eliminate such names from advertising lists before mailing expensive catalogs or other literature to the trade. Requests for catalogs from concerns or individuals in the blue book should be ignored.

There has been considerable discussion in the last few years of the high cost of distribution and it is my opinion that selling materials in larger quantities to a carefully selected list of electragists that discount or pay their bills promptly will materially aid in reducing the cost of distribution in the electrical industry. Such electragists will naturally buy in larger quantities with resulting reduction in selling and delivery expenses.

In Babson's barometer letter of recent date he states: "We have applied all that science and human ingenuity have contributed to production but we have let distribution look out for itself. The result is that our manufacturing cost has been cut to a fraction of what it was fifty years ago, but the percentage cost of distribution is much more than it was fifty years ago." There is therefore need for study of this subject by credit men as well as by other branches of the electrical industry.

How Electric Leagues Can Help

By J. E. Bullard

A Talk on the Subject by K. A. McIntyre of the S. E. D. Before Recent Rhode Island Meeting

On January 9, at 8 p. m., in the office of F. A. Gallagher of the Narragansett Electric Company, the Rhode Island Electrical League held a meeting for the purpose of bringing to the attention of the members plans for activities the League can undertake for 1923. At this meeting Kenneth McIntyre of the Society for Electrical Development, outlined the objects of a League and pointed to important activities a league should undertake. He illustrated his talk with a chart drawn upon a blackboard.

Mr. McIntyre prefaced his remarks by stating that there are two distinct types of organizations, the group and the coöperative. By the group is meant the organization of a certain group in the industry such as the manufacturers, the central stations, the jobbers, or the electragists.

The group organization dates back to near the beginning of the industry, the National Electric Light Association being organized soon after the birth of the electrical industry. He pointed out the great importance of these organizations and suggested that the electragists could well take an even greater interest in their own organization than they are at the present time.

The coöperative organization is of an entirely different type. The first of this type to be organized was started in 1906, and reorganized in 1913 and given the name of The Society for Electrical Development. In such an organization all the different groups are engaged in the work.

In the case of the group organization, self interest is the motive. The objects may be bettering the commercial condition of the group, raising standards, and raising the standing of the group itself. Such objects are very proper to such organizations.

Developing the Whole Industry

Every member of the industry should support his group organization first. No electragist can be a really good coöperator till thoroughly sold on his national organization. However, no group organization properly function for the whole industry.

The coöperative organization on the other hand has for its function to develop the whole electrical business. It has for its job the development of the industry as a whole. In such an organization the members must look less for direct than for indirect benefit. The returns that each member gets is his share of the increased development of the industry as a whole.

Local leagues are a recent development of the coöperative idea that has been carried on by the Society for Electrical Development, and as a result they are modeled to a great degree after this society.

There are wonderful opportunities open to such leagues and they deserve the hearty support of everyone in the industry. However, there is always danger that local leagues may fall into the error of trying to do the work of the group organization. For example they may try to educate the electragist. This is sure to be resented by the men that are trying to be educated, and it is right that these men should resent it for the league is not in a position to carry on such work. It belongs to the group organization.

The development of the electragist rests with himself, the contractor-dealer associations, and the jobber. The jobber is interested in a dollars and cents way of educating his own customers. Some leagues have attempted to prepare accounting systems and window trims for their dealer members but they are not able to make a real success of it because real league work must embrace all the groups.

It is not necessary for a league to go outside of its real field to find plenty to do for we are far short of even our present possibilities. A survey made of 1,500 homes showed a lighting condition of only 40 percent of standard. There were only two convenience outlets per house where nine were the number recommended. In this country there are some nine million automobiles in use whereas there are only two million electric washers.

In industrial lighting a survey made two years ago indicated a lighting condition that was only 25 percent of the standard that should be used and it is estimated that the best use of electric motors would eliminate a large part of the $185,000,000 which the friction of line shafting costs the country every year. There is plenty to do.

The reason why this condition exists is because the general public lacks information on things electrical. People do not know what they ought to have. They don't know what adequate wiring is.

Public Lacks Information

We must inform the public, Mr. McIntyre explained, and bring about a desire for things electrical. This can be done by the right kind of publicity, by teaching the people, for the public will not demand a proper job till people know what they want.

When a woman looks at a new house she makes certain that there is room for the piano and that it can be brought into and taken out of this room. Then she inspects the bath room. The bath room must be right or she will not take the house. She knows what a bath room should be. The electric wiring, however, doesn't count. She may not even ask if the house is wired.

The individual electragist cannot educate the people. He can't sell the right kind of job until the people have been educated by the coöperative organization. The difficulty experienced in selling appliances is also due to ignorance on the part of the people.

The automobile industry has sold the public at large the idea of the automobile. The electrical industry must sell the idea of electricity.

Mr. McIntyre then suggested as different ways the people might be reached, as through the newspapers, the magazines, the business papers, electric shows, electric homes, direct mail, industrial lighting exhibits, and lectures. He also called attention to the necessity of team work. Out of the 105,000,000 people in the United States there are only some 350,000 people in the electrical industry to do this work of education. This means that each person must educate 320 people. Since there are so many who do not do their share of the work, the actual facts are more nearly a ratio of 3,200 to be educated by each person taking an active part in the development of the industry.

The work, Mr. McIntyre insisted, must go on unceasingly. Far too often it is undertaken for a year and then discon-

tinued. The result is that all the good effects of that year's work are lost, the money and the time put into it has been largely wasted because the work is not carried on.

A League's First Job

One of the first jobs of the local league is to sell each person in the industry. Sell the idea that each man is a part of the industry and the idea of equipment, better wiring and more appliances. To carry out this plan effectively a survey must first be made to find out exactly where you stand. You must know to what extent the people in the industry are already using electricity and appliances.

Mr. McIntyre then took up newspaper publicity showing how it could be used and what the Society for Electrical Development would do to help make it more effective. He followed this by mentioning electrical homes and the handbooks, booklets, and advertising service the Society is in a position to furnish at cost which if used in the case of all the electrical homes this year would result in a saving of from $25,000 to $50,000.

He then talked about the very great importance of local field work, especially among architects, builders and home owners. He showed how in California through this field work, it has been possible to raise the standards of wiring to a point where there is at least one convenience outlet in every room in the house and in most houses where the field work has been carried on in the community there are more than one per room.

He spoke of his own experience in making surveys and aiding in local field work to show what wonderful results could be expected from this work and how much better it could be done by a league than by any group or individual organizations. He laid great stress upon the importance of this work and the real necessity of the Rhode Island Electrical League's undertaking it at once.

Special Campaigns

Industrial lighting exhibits he claimed should be made a permanent feature of local league work and spoke of special campaigns which could be carried on in a coöperative manner. In this connection he called attention to the display materials and the advertising helps the Society for Electrical Development is in a position to furnish.

He called attention to the exceptional opportunities for profitable business now offered. The inventors, the manufacturers, and the central stations have prepared the opportunity. All that is now necessary is to cash in on it. But each person owes a debt of time and money to develop the industry. We must maintain a sense of proportion and not expect too much from coöperative work. All have to stand on their own feet.

In league work leadership is important. You must have good leaders and then support them. They do the planning and the others must see that the plan is carried out. The secretary should not be called upon to do the planning. The leaders should plan. The membership committee should attend to getting members and the finance committee to collecting the dues from the slow payers. It is necessary to leave the secretary free to do the job a secretary should do.

H. E. Dawson, secretary of the League, then explained to those present that plans were being formulated to carry out the ideas suggested by Mr. McIntyre.

In answer to a question regarding the relative importance of electric shows and electrical homes, Mr. McIntyre brought out very clearly the impossibility of comparing the two by pointing out that the function of the show was to sell appliances while the function of the home was to educate the public. He also stated that after an electrical home had been put on, it was necessary to follow it up with field work if the best results were to be obtained and that nothing else should be attempted before the good work started by the home had been completed or the necessary field and educational work could be continued while other things were being undertaken.

The question was then asked if a real educational film would not be of great value, a film that would tell the people something, that would give them real information and one that was made by a firm of experience. It was admitted that such a film would be of very great value.

Mr. Dawson then outlined some features the league was considering, and Mr. Gallagher of the Narragansett Electric Lighting Company called attention to the great increase in central station business that had been realized during 1922 and that in spite of this increase the meter installations were still only 50 percent of the saturation point. In the appliance business the saturation point can never be reached, it was agreed.

Becoming an Electragist

By GEORGE ROOME SMITH

The Writer is Indebted to the New York Herald for Statistics Quoted

The thought which naturally comes to one's mind when considering the merchandising of electrical appliances of supplies is: What are the prospects for growth in business? To the electrical contractor contemplating going into the merchandising business—becoming a contractor-dealer or electragist if you please—the careful consideration of this question will prove both helpful and profitable.

Metropolitan New York, for example, is the largest and wealthiest market in the country. It is the quickest buying and largest buying market in the world. The possibilities of this huge market are so immense and far reaching that it must be developed separately It cannot be included as a part of a campaign, sectional or national. To get the maximum results, it must have a campaign of its own.

New York metropolitan territory consists of the five borough of the city proper and the adjacent suburban territory—50-mile radius of the city hall. The suburban territory falls into the three state of New York, New Jersey and Connecticut.

The population of metropolitan New York is 8,960,000. This means that one out of every twelve persons in the United States lives in this territory. Only one state in the Union has a larger population than metropolitan New York—and that is the state of New York.

There are some 32,626 manufacturing establishments in metropolitan New York whose combined product annually represent a total of $5,267,343,000. The earnings of the 932,950 families in this area total $1,044,529,000 annually.

There is no better evidence of the increasing possibilities for the sale of electrical appliances than the growth in the number of residential customers served by electric light and power companies.

Other things being equal, the community that shows a large increase in the number of residential customers served with electricity, presents a correspondingly increasing market for electrical appliances.

Although there has been a remarkable

increase in the sales of electrical appliances in recent years, the potential market is far from saturated. That is because the industry itself is comparatively young and because the need for electrical appliances is so universal.

The potential future market for electrical appliances, as indicated by the number of families not yet using electricity, is larger in metropolitan New York than in any state in the country, with the exception of New York State.

There are 1,122,150 families not yet using electricity in metropolitan New York. This is 54.5 percent of the total population. New York state has 1,631,525 families not yet using electricity.

With these vast potentialities in thought the prospective electragist naturally asks what are the manufacturers doing to coöperate with him in an effort to sell in this market.

Dealers are getting the help of the manufacturers, who are producing and providing wonderful sales helps, dealer booklets, window displays, motion picture films, lantern slides, folders, leaflets and other aids to educate the dealer's customers and help him sell goods.

The prospective electragist would do well to survey the field and select the manufacturer whose products he contemplates handling, then get in contact with the merchandising organization of this manufacturers and let them suggest and work out with him a plan to cover his local condition.

Winter the Time to Push Lamps

By W. B. Stoddard

This Particular Time of Year Naturally Helps Electragists to Make Extensive Sales in Lighting Equipment

Now that the days are short and artificial light is needed more and more the ideal time has arrived to push the sale of electric lamps of all descriptions. While much can be accomplished by individual effort, team work is always more effective and the plan adopted by the merchants of Los Angeles, Cal., could be worked out to good advantage in any community.

Shortly after the holidays, when the days were short and rainy, all of the lamp men of the city coöperated to push the sale of lamps. A certain period was designated as Lamp Week, and during that time every store featured lamps in their windows and in their stores, in the newspapers, and through direct mail advertising. The merchants started their campaign by a large general ad, no store being mentioned, the idea being to sell the public on the idea of buying lamps NOW, and allowing them to select their own store for this purpose. The ad read:

DO YOU READ BY CANDLE LIGHT?

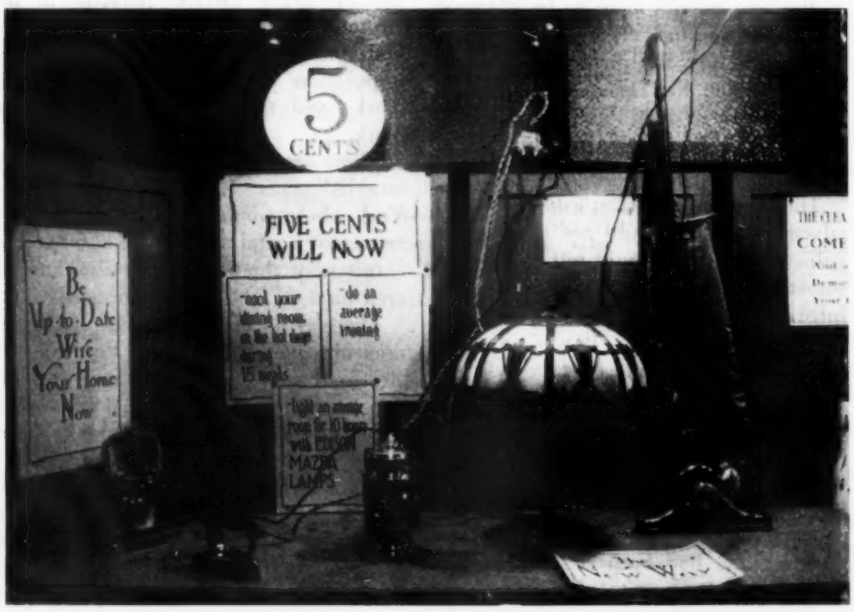
Of course you don't—since electricity has been brought to you in so many admirable forms. Aladdin's Magic Lamp wrought no more fairy like effects than does one of the poetic lamps and lamp shades conceived by a present day artist.

Introduce into an uncompromisingly harsh room a great shade, say mulberry over rose lining, and quick as—electric light—the harsh room is transformed into a soothing place of relaxation and happy thoughts. Soft light has done it all.

Celebrate Lamp Week by getting that lamp you have long needed for drawing room or den, dining room or boudoir.

Later in the campaign each store advertised individually, and during Lamp Week lamp ads appeared on every page of the daily papers. The newspapers themselves gave plenty of free publicity, with reading notices on the importance of good light for the students, and the æsthetic value of art lamps in the home. All the stores likewise blossomed out with lamp displays, and among the best was the Bureau of Power that arranged companion windows showing the wonderful strides in household labor and convenience since the advent of electricity.

The first window showed an average home of a quarter century ago. At one side was a coal-oil stove, with coffee pot, toaster (in which was some half burnt toast) and an old fashioned iron. There was also a candle and an open gas jet and at the other end a somewhat frazzled broom. Standing guard over all was an old fashioned kerosene lamp. The second window showed an electric toaster (in which was crisp toast), an electric iron, and a percolator, all attached to a wall plug by three cords. At the other side was a vacuum cleaner, while the centre of attraction was a beautiful electric lamp with art shade "a thing of beauty and joy forever."



After Displaying Oldtime Methods the Bureau of Power, Los Angeles, Made up This Exhibit Showing the New Electric Way

A card on the side wall advised: "Be uptodate. Wire your home NOW." On the wall was a huge five cent piece and beneath it a card: "Five cents will now—Cool your dining room on the hot days during fifteen meals—do an average ironing—light an average room for ten hours." Another card near the plugs advised "Just attach to your electric light socket." Cards in the two windows suggested "The Old Way" and "The New Way."

Where the coöperation of all the merchants cannot be obtained, a single one can put over an effective campaign if sufficient time and thought is given to it. The Union Electric Company, Pittsburgh, Pa., during the month of January focused its attention on reading lamps for the home and school and did an excellent business. Their ad, which showed a student bending over his books under the glow of a shade lamp, said:

WHEN DAYLIGHT FAILS

some sort of light must be supplied, for its work, work, work in college! And the eyes of the student are too easily ruined to tolerate the ordinary swinging and glaring electric bulb.

Adjustable floor lamps in simple old brass finish are ideal for use beside desk, study table, dresser or chair. The chief feature in their favor is their genuine practicability. There are also desk lamps in finishes of old ivory, dull gold and bronze.

Prices and descriptions of all of these lamps were given, and the reader was referred to the special lamp section—which was aglow during the entire month with scores of floor and stand lamps, with shades of art glass, parchment, of soft silken draperies in any hue to match the upholstery of the room.

The windows reflected the lamp campaign as they were given over to displays of student lamps. The first showed a number of mounds covered with green velvet, and on each of these were desk lamps with chains and green shades. In the rear was a large poster showing a boy studying under the bright rays of one of these lamps, and the picture was captioned: "Be kind to your eyes." All of these lamps were illuminated at night. The second window specialized in a single type of lamp. On a table covered with a gold brocaded cloth were half a dozen electric lamps with brass bases and shades. Others were piled on the floor, while still more was clamped to the wall or window glass. A large card advised:

THE LAMP OF A THOUSAND POSITIONS

You can hang it, stick it, clamp it or stand it.
There's a soft, mellow light just where you want it most.
Ask to see it demonstrated.

A black background and green floor covering gave good contrast to the many brightly polished brass lamps. In the background were several pyramids formed of boxed lamps, wrapped and tied, ready for delivery.

A special lamp drive that attracted much attention was arranged by the Gray Electric Company, Springfield, Ohio. Through the columns of the newspapers they announced that they would put on sale a handsome electric chandelier. The ad concluded with: "See this handsome lamp in our show window."

For the benefit of those who might not have read the ad they gave a full explanation in the window. The chandelier was hung from the ceiling, and chalked on the window in white letters, with a red arrow pointing to the electric lamp, were the words: "This lamp will be reduced one dollar each day until sold." A card beneath the lamp had printed in big figures "22.50," the price at which the lamp was put on sale—of course it was not strictly a sale but rather unique idea to attract attention.

The next day there was a line drawn through the figures and beneath appeared the numbers "21.50." By this time great interest was aroused, and several people had their eye on the lamp waiting for it to come lower. By the third day there were a score of people considering it—and on the fourth day there appeared in large black letters the word "Sold." One of the watchers had become apprehensive and snapped it up. As a matter of fact the lamp was sold appreciably above cost, while the publicity it had brought the firm was immeasurable in value.

On the floor were a number of boudoir lamp with shades of red, yellow, blue or green silk. All of these were lighted at night, causing the window to present a beautiful and colorful appearance. A small window at the other side of the entrance was filled with students' lamps of different kinds, and chalked on the glass were the words: "Welcome Student! Get Your Study Lamps Here" Inside the store the lamps were all brought to the front so that they would be seen immediately upon entering the store.

There was a case of boudoir lamps, and over it a rack on which were hung bulbs ranging from 40 watts up. It was thus easy to demonstrate the brilliance of any bulb, and also to show the light that each would cast when covered by shades of different density. A table on the opposite side of the aisle held several stand lamps, while floor lamps with handsome silken shades were set at each end of the table. An art card, set among the larger lamps, bore the suggestion: "He Who Gives a Lamp, Gives Cheer."

Without the Aid of Other Dealers the Union Electric Company of Pittsburgh Emphasized Lighting Equipment in the Above Manner

Merchandising From the Jobber's Viewpoint—I

By W. R. Herstein

How to Know the Amount of Profit to Expect From Certain Lines—Talk Before Cleveland Convention

[NOTE: Mr. Herstein's discussion of the problem was so full and complete that it is deemed advisable to print his paper in two parts. The second part will be run in an early number.—The Editor.]

In dealing with the subject of merchandising from the electrical supply jobbers' point of view I shall assume that the matter to be discussed is not the broad field of activity pertaining to the entire electrical jobbing line but that it is to be narrowed to that particular class of goods which consists very largely of household appliances and similar devices. I shall assume also that the character of merchandising to be considered is that which is engaged in by the retail dealer, and that we are to discuss it from the standpoint of the jobber who is interested in marketing his lines through such retail outlets.

It may be well at the outset to give some thought as to which of these lines lend themselves to jobbing practices and which are not of such character as to make their handling by the jobber possible or profitable. From experience gained in the past ten years I presume I will be safe in saying that the mere fact of a device being operated electrically does not automatically or necessarily bring it into the category of things to be stocked by the jobber. I think I will be equally safe in saying that commodities which lend themselves to jobbing in certain sections of the country may be totally unsuited for jobbing in others. By way of illustration we may take the now celebrated case of the washing machine, which is still a prolific source of business to some jobbers in eastern, northern, and western cities, but which is practically a total loss to southern jobbers. The equally celebrated case of the farm lighting plant has had its phase of big business for certain jobbers, followed by almost total eclipse—recently—a reviving demand here and there, but still a bitter memory for most of us.

The vacuum sweeper is another bone of contention. Whether it is now or will ever become a proper object for jobbing is still in the minds of many an open question. The storage battery has been tried and discarded by most of us, and the new subject of radio is staring us in the face.

There remain, however, a goodly number of lines about which there can scarcely be a diversity of opinion.

Incandescent Lamps a Staple

First and foremost of these I would place the incandescent lamp, or rather I should say the Mazda lamp, because the far seeing and square dealing gentlemen who have created the Mazda lamp and its plan of distribution have made it an article of commerce which probably has no equal in the satisfaction it gives to the jobber, the retailer, and the central station, and in the item of real value per dollar to the consumer. To speak of incandescent lamps and fail to discriminate between the Mazda lamp and its competitors would stamp me as a poor sort of jobber indeed.

The Mazda lamp, by reason of its comparatively large volume of sales, its small selling expense, and the liberal remuneration to be earned, easily takes first place, in my opinion, among merchandising lines, both for the jobber and retailer. When sold it usually stays sold. It requires no servicing, and the state of perfection to which it has been brought by the manufacturers makes friends for both the lamp and the dealer.

Following the incandescent lamp the mind almost naturally turns to what is known as the heating device line. Almost as naturally the average jobber immediately rejects from this line the electric range. As a rule the range has not met with favor among jobbers except in localities where water power or natural gas is available, or where other circumstances have rendered possible low range rates for current. Even in such localities the range is not particularly satisfactory to either jobber or retailer, because for some apparently unknown reason the device must be placed in the hands of the consumer for absurdly near the price at which it is placed in the hands of the jobber and retailer. Diligent inquiry fails to disclose the reason for this state of affairs, and when the earnest investigator has made the rounds of the manufacturers the only definite impression he carries away is the feeling that among makers of electric ranges the national game of passing the buck has reached the acme of perfection.

Heating Device is Jobbers' Province

The great bulk of the heating device line, however, is particularly the jobbers' province. Second possibly to the incandescent lamp in volume, the majority of its items are now so staple that their selling expense has been reduced to a low point. The margin of profit, of which I shall speak later, is not satisfactory either to jobber or dealer, and if the standard of excellence set up by devices manufactured under the Marsh patent is to be maintained, this must be rectified. Otherwise retailers and possibly jobbers also will be compelled to seek more profitable if less meritorious lines.

Following the two lines just named the electric fan in a large part of the country ranks next in importance. It may surprise some of you when I say that in my opinion the electric fan is the least profitable, least desirable, and most unsatisfactory line a jobber handles. I do not even except in my own case the washing machine, because a jobber may discontinue handling the washing machine if he likes but he is practically compelled to handle fans. The objectionable features to the fan may be enumerated as follows:

1. It is not only a seasonal article but its season is largely confined to a brief number of days. In my own section this brief season sometimes develops in May, sometimes in June, and sometimes in July. It has been known to develop in April. During a period of four months then a maximum stock must be held in readiness for this uncertain sales opportunity.

2. Few jobbers can successfully forecast the demand by types and sizes. Almost invariably one or more catalog numbers become exhausted; there are then frantic efforts to quickly replenish the stock with inevitable dissatisfaction to customers, and not infrequently the replenishment stock arrives too late and must be carried over to next year.

3. It not infrequently happens that cool weather prevails until so late in the summer that the public becomes acclimated and decides to pull through without a fan. The stock carried over then becomes a matter of real concern, because no efforts however aggressive can liquidate this asset until eight or nine months have passed.

4. Competition in the sale of fans is keen. Beginning usually in January solicitation of contracts by salesmen runs through until the first hot spell arrives, and in the interval by delaying action and playing one salesman against the other shrewd buyers are usually able to name their own discounts or at least secure the jobber's best price regardless of quantity. It is not

unusual for a buyer whose requirements will supposedly be large to obtain maximum discounts and produce a volume of only a few dozen fans during the season. While this is happening to the jobber the retailer is confronted with the cut price bargain sale of the department store which seemingly glories in opportunities of this kind to create a false impression as to the cheapness of its own lines by deliberately cheapening the prices of lines in which it is not primarily interested.

5. As before stated the big sale of fans develops and passes with a rush. While it exists the ordinary line of credit extended a customer is doubled, trebled, or quadrupled. A retailer buying and paying for five hundred dollar's worth of goods per month will owe his jobber two thousand dollars during the fan month. Nearly every year we encounter some customers who are never again able to get back to a thirty day basis. For some reason they fail to pay for the fans during the month succeeding their purchase and a dreary campaign of dunning letters from the credit department not only fails to get the money but loses the goodwill of a formerly valuable dealer. I venture to say that nearly every jobber experiences one or more of these "hand overs" from each season's fan business.

On the whole therefore I feel safe in reiterating the assertion that fans are the least profitable and least satisfactory line the jobber handles. Even at best, considering the perilous nature of the business, the remuneration given jobbers and dealers is woefully inadequate; and the price at which the jobber is expected to sell fans to syndicates and holding companies is such as would make his banker suspect the jobber's solvency or sanity, if the banker ever learned of it—which heaven forbid.

Ranking next in importance to the three lines named, washing machines might be named by some jobbers, vacuum sweepers by others and possibly varying lines by still others. With my own company and probably with a majority of jobbers radio undoubtedly ranks fourth. Here is a comparatively new line which in the light of experience ought to have got started right but didn't. One or two of the largest manufacturers did adopt a policy in the selection of distributors which was in the right direction and which, considering the mushroom growth of their industry and the necessity for emergency action, showed remarkably good judgment.

Their emergency judgment concerning remuneration to the jobbers and retailers was equally good, but their tardiness in modifying this remuneration to fit the requirements of the case indicates a seeming lack of perception that the emergency is over. This is giving a decided advantage to their smaller competitors which these latter are eagerly grasping; and as in the case of the heating device if the standard of quality is to be maintained the compensation to the dealer must be such that he can profitably handle the product. Parenthetically it may be remarked that the value of radio as a merchandising line is greatly reduced and may be practically lost if the spark set nuisance is not curbed. The young amateur should not be discouraged but his activities should be limited to certain daylight hours. It is putting a great deal of power into the hands of one boy when he is permitted to render valueless thousands of dollars worth of radio apparatus installed in his neighborhood, and by his lone and selfish caprice to deprive an entire city's population of the privilege of enjoying radio broadcasting for as long a time as he sees fit.

Less Important Devices

The foregoing I believe constitute the outstanding individual lines of merchandise now being handled by jobbers. There are of course numerous less important devices such as sewing machine motors, electrical toys, electrical automobile accessories, flash lights, therapeutical devices, and so on, practically without end. There can be no longer any question as to whether the jobber will continue to function as distributor of these commodities. So long as competition exists among manufacturers we will always be found representing one or another of them; largely as regards the lines I have enumerated, and less actively regarding such lines as washing machines, vacuum cleaners, farm lighting plants, etc.; because a certain small demand for even these lines will come to us practically unsolicited and solely by virtue of our being known as jobbers. To what extent the electrical jobber shall share the distribution of his major merchandising lines with the hardware, drug, dry goods, notions, and grocery jobbers, and even with the manufacturers themselves, is a serious and growing problem, and is one with which the remainder of this paper will largely deal.

Concerning the choice of outlets offered the jobber on his merchandising lines, opinions vary. There is a very well defined sentiment in the industry and particularly among the manufacturers that business should be accepted wherever offered, and that the fitness of the outlet for marketing electrical devices is of minor consideration. I think it is only fair, however, to start with the premise that even the simplest of these devices is more or less technical in character, and that some acquaintance with the rudiments of the science is essential to successful salesmanship. The interest of the industry, particularly the manufacturing section, lies in the two factors of intelligent salesmanship and a due regard for quality. If we can ascertain where these requisites may best be had, we have solved the problem of retail distribution.

Jobbers' Association Plays Part

A brief reference to the work of the Electrical Supply Jobbers' Association may here be helpful. Beginning in the early days when electrical jobbers and manufacturers were both comparatively few in number there originated a feeling that we were trustees for the future of the industry and that we were under an obligation to deal squarely with a more or less ignorant public. Manufacturers took pride in the production of meritorious devices and jobbers gladly coöperated with them in maintaining the quality of their product. As time passed and the number of manufacturers and jobbers increased bringing into the field devices varying in excellence the lessons of earlier years to show results, and the older jobbers stood by the manufacturers whose watchword had been Quality First. So it has come about that wherever one finds an association jobber he continues to find an advocate of quality in electrical devices.

As the jobbers in those early days acquired a respect for quality they did not fail to pass it on to their customers who were also few in number and who were chiefly contractors and central stations. Merchandising lines were practically unknown then, save the electric fan which compared with other devices, may almost be termed prehistoric.

With the advent of the iron, the toaster, and the disc stove, the contractor began to put up shelving, and the more ambitious bought a show case, though as yet the central station was not interested. The jobber, however, continued to talk quality, and when the central station finally took notice it learned that if quality meant anything to the dealer it meant everything to the operator because faint glimmers of an enormous offpeak load began to show through, if only the devices gave satisfaction.

But the immense possibilities of the appliance business attracted the attention of others besides the central station. Manufacturers of nonelectrical lines got into the game; competition for representation became keen; the

inevitable production of devices low in price and in quality followed, and there is where we find the industry today. Association and other reputable jobbers as a rule continue their efforts to encourage merit in production. Their influence over their old customers, the contractors, and central stations, still prevails to some extent over the lure of cheapness in price and quality. A factor in the retail situation, however, paralleling the nonelectrical manufacturers has developed. The nonelectrical retailer has also been attracted to the field. His first ventures as a rule were instigated by the newcomers in the manufacturing end, followed presently by his recognition by the older manufacturers and then by the jobbers.

Keep Quality Above Price

We have now reached a point where I feel that a well defined issue presents itself to the industry. As I said a while back there is a large sentiment that business should be accepted wherever offered. The plain, clean cut issue is: Shall we continue to accept business wherever offered, or shall we endeavor to confine our own particular lines to customers who will coöperate with us in the endeavor to keep quality above price and to pass the production into the hands of the user through the medium of keen, intelligent salesmanship?

Let me say that I have no quarrel with manufacturers who produce a moderate priced or even what we term a cheap device so long as it is not done at the sacrifice of merit and safety. Similarly I hold no brief for manufacturers of superior goods at higher prices. I sincerely believe there should be grades in electrical merchandise just as there are in clothing, footwear, jewelry, and nearly everything else, and that the purchaser should have the privilege of buying according to his purse, but there should be a limit below which no self respecting dealer, jobber, or manufacturer would be willing to go.

Increasing the Convenience of Appliances

By W. A. Wolff

How to Enhance the Household Use of Electricity So That More Prospects Will Become Buyers

Even in this enlightened day when newspapers and magazines are full of discussion and praise for the electrical home, it seems safe to say that comparatively few people have any idea how completely electricity can be made to perform the myriad household tasks that confront the average housewife each day. With a full realization of such possibilities, however, often comes the question of whether the bother of using electrical devices may not to some extent at least offset their accomplishments, for in order to get the full benefit from household use of electricity it is often desirable to put current to several or possibly half a dozen uses in a single room at the same time.

The solution of this problem lies in more convenience outlets. In other words, electricity is in a sense a servant and when sufficient outlets are not provided, it handicaps this servant just as much as it would handicap a human servant to tie one of his hands behind his back. On the other hand, if the household electrical servant is encouraged to do his best, through plenty of convenience outlets properly placed, it will render more uniform and satisfactory service in every room in the house, and twenty-four hours each day if necessary, than any human servant could do.

To assure such service, however, one must have a clear mental picture of what tasks electricity is capable of performing in each room.

Electric lighting, for instance, should not be limited to ceiling pendants, but provision should be made for wall brackets, floor lamps, reading lamps, table lamps, and candlestick lamps. The greatest comfort in a home is adequate and proper illumination. When a person comes into a room where the light is abundant and yet not glaring—where the multicolored lamp shades present a certain total warmth—an indescribable restfulness is experienced which makes it a pleasure to prolong the visit.

Kitchen Methods

In the kitchen it is not enough merely to provide receptacles for lights, an iron, and possibly a fan. In the kitchen of an electric home one finds provisions, at least in the way of convenience outlets, for complete electrical equipment. Probably the greatest labor saver in the way of such equipment is the electric range, in the best type of which the heat in the ovens can be turned on automatically at any desired time and turned off in like manner when the required temperature has been reached, thereby permitting the housewife to cook steaks, roasts, chops, pies, cakes, and the like, while absent from the house or when attending to other duties with the assurance that such foods will be done just right.

Other labor saving and comfort assuring electric equipment for the modern kitchen includes the dish washer, sweeper, iron, fan, waffle iron, refrigerating machine, and by no means least, a small electric motor. For polishing silverware and utensils and grinding knives a small motor will be found worth all it casts. In addition if the man of the house is the least bit mechanically inclined, he can with a simple speed reducing device belt such a motor to the household meat and food grinder and put it to other labor saving uses, some of which will be mentioned later in this article.

All of the numerous electric devices mentioned for the kitchen are giving satisfactory service every day in thousands of homes throughout the world and if a little intelligent thought is given to providing a reasonable number of convenience outlets for their use and to placing such outlets advantageously, almost any housewife who know will certify that the use of the devices mentioned is a pleasure rather than a bother.

In the dining room the use at the table of the electric percolator, toaster, chafing dish, and grill or toaster stove has become habitual in many homes. In fact, dining room furniture is now being made with concealed wiring for the use of such devices. In addition, the advantages of provision for use of the electric sweeper, fan, and heater in the dining room are apparent. All this makes an ample number of convenience outlets in the dining room and the care in selecting their locations as important as in the kitchen.

The same is true of the living room, where is found need for floor, reading,

and table lamps, sweeper, fan, and electric heater.

Consider Bedroom and Bathroom

In bedroom and boudoir must be made provision for lamps, curling iron, warming pad, sweeper, fan and electric heater.

Mention of the bathroom brings to mind the need of the electric water heater to heat water for shaving, for the sick room, and for the many times a small quantity of hot water is needed in a hurry; also the electric sterilizer; the electric heater or reflector to dry one's hair or to radiate a welcome warmth on a chilly day; and the fan which is so necessary to every room in the house in hot weather, but doubly so in the bathroom, because it makes an easy matter of drying the hair after a shampoo. One convenience outlet for these varied uses would scarcely fit in with the modern idea of convenience and efficiency.

Even the sewing room presents a number of labor saving uses of electricity which make a requisite number of convenience outlets desirable. First of course is proper provision for the sew motor or the electric sewing machine, after which comes provision for sweeper, lamps, fan, electric heater, and a light iron for pressing newly made garments.

The nursery and play room demand enough outlets to accommodate the milk bottle warmer, warming pad. water heater, sweeper, lamps, fan, electric heater and electric toys.

In the laundry provision must of course be made for the electric washing equipment and the electric ironer and in the basement or cellar an electric heater will often be found desirable. Here also a small electric motor such as is recommended for use in the kitchen, will be found valuable in a dozen different ways.

It can easily be arranged so that its power can be applied to turning an ice cream freezer and it is excellent for grinding tools and buffing metal articles. It can also be rigged up to serve effectively where accurate drilling of holes is necessary. If the man of the house is of a mechanical bent, it might also be worth while to have a small electric glue pot as a part of his work bench equipment. In fact unexpected uses for electricity in the lower part of the house often come up, and it is the part of wisdom to have more convenience outlets there than actually seem necessary.

This thought is really so important that it deserves emphasis in connection with the entire home. Even in this apparent electrical age, the development of this wonderful force is still in its infancy and it is practically an assured fact that each year will bring forth many more household uses. And since it is evident that more convenience outlets mean more convenience in fact, it is much better to have what at present may appear too many than not to have enough.

Meaning of Title Realtor

By CHARLES E. ROUSEK

How and Why It Was Brought Into Being Is Explained

[NOTE: As the word Realtor has an application in the real estate field similiar to the word Electragist in connection with things electric, it is urged that all Electragists read this article and profit by the facts of the discussion.—The Editor.]

Is it not an undeniable fact that "back of every perfected achievement of man is specialization?" Very well, the National Association of Real Estate Boards would have you become better acquainted with the specialist in real estate—The Realtor. For the Realtor is truly a professional man, he is a technical expert. He is invariably the specialist in real estate in his community. The foremost works today in the real estate field—whether in salesmanship auctioneering, long term leasing or appraising, are written by Realtors. The license commissioners in our various states are almost without exception Realtors. The classes in the colleges and universities that offer a course in real estate and insurance are conducted by Realtors. The Realtor leads because he is a specialist.

Perhaps to many the word is new. But from its use, especially in the press, many believe the word to mean merely one engaged in the real estate business. Often local papers refer to real estate men as Realtors, even though these real estate men may have no local board and do not belong to their state association, which are necessary qualifications for a Realtor. A Realtor is one engaged in the real estate profession, who is a member in good standing in his local Real Estate Board, which board belongs to the National Real Estate Association.

As for the derivation of the word, Realtor, it was coined by N. C. Chadbourn, a member of the Minneapolis Real Estate Board and was adopted and copyrighted by the National Real Estate Association some seven years ago. The true meaning of the word Realtor is as large, as big as that organization of trained men who have banded themselves together by a code of ethics to govern their actions. The older and better men in the business gathered together and determined to protect the profession—which is possibly the oldest in existence, dealing as it does with the very "foundation of all wealth"—and to elevate it to the highest plane attainable.

Being in a truly legitimate business and devoting their lives to its study and practice, these men dedicated to govern themselves that none of their number might give other than true service. And today the Realtor obligates himself to protect the interests of his clients: his motto is Service, Knowledge and Integrity. This better government by the real estate men, starting as it did from among their own numbers, has progressed until now some eighteen or twenty states require that those dealing in real estate be licensed.

Those who are privileged to use the word, Realtor, and it is indeed a privilege, have had to qualify with their experience, and more especially their reputation, which has been well scrutinized. And while one must possess certain qualifications to be entitled to use the word Realtor he must at all times conduct his business in a manner beyond reproach. Unscrupulous dealings are not tolerated and deprive one of the privileged title. Just as it may appear somewhat easy to procure a State Real Estate License, but impossible for the unscrupulous to retain it, so it is with the title Realtor.

All real estate boards advocate that the public deal with a Realtor for the reason that the service rendered will be honest, intelligent and responsible. It cannot be otherwise. A Realtor is proud of his name; he will give you true Service.

Machinery Output

According to the New York State Committee on Public Utility Information, New York is the leading state in the manufacture of electrical machinery. Ohio is second. New York, Pennsylvania, Ohio, Illinois, New Jersey and Massachusetts together produced 80.3 of the total value of the industry's output in 1919, which was then approximately $1,000,000,000, and is now considerably larger.

Analyzing Costs and Character of Service

Extract From Speech of John F. Gilchrist Before Last Meeting of Great Lakes Division, N. E. L. A.

At the last meeting of the Great Lakes division of the National Electric Light Association held at French Lick Springs, Indiana, John F. Gilchrist, vice president of the Commonwealth Edison Company of Chicago, presented a paper entitled, "Policies in Merchandising Electric Appliances." The author dwelt somewhat at length on merchandising policies and then expressed an argument in favor of analysis of costs and service in the retail branch of the electrical industry.

Going into detail, Mr. Gilchrist took the case of the washing machine as typical of the entire business, and prefacing his remarks on this subject he read the following letter received from an able and intelligent dealer in a midwest city:

> The average dealer's discount, as you are no doubt aware, varies from 25 to 35 and 5 percent. The average dealer's overhead, as determind by the National Association of Contractors and Dealers from stores in operation, is 28 percent.
>
> Every family uses a cook stove, either gas or coal, but a cook stove of some kind, and the discount to the dealer on cook stoves is from 40 to 60 percent, varying with the make and quality of the product. Cook stoves sell themselves. Washing machines have to be sold and require not only expensive sales force but expensive advertising as well.
>
> If the margin on washing machines was 50 percent, every electrical dealer and contractor could be an outlet for the washing machines, but dealers today are only selling washing machines because they have listened to some persuasive argument of a good salesman, and not because they are making any money upon them.
>
> Checking up our own cost for the last year, taking the total machines sold at the selling price on the one hand and the cost of selling the machines on the other hand including the cost of the machine, the delivery charges, the advertising charges, the demonstrating charges, and the servicing charges, we find that we paid each one of our washing machine customers during the year 1920, $8.22 for the privilege of selling them the machine.
>
> This will give your our viewpoint on the washing machine business, and why we are going to discontinue it.

The only trouble with this gentleman's statement, says Mr. Gilchrist, is that he has not done business in a big enough way to appreciate what all of the real costs are, and that in a big business they are actually much heavier than he states. Had he been doing business on a scale which would have required his going after it in the most vigorous way, he would probably have found that it had cost him $20.00 to $25.00 per machine for the pleasure of being in business, instead of $8.22. I think any of us who have done any analyzing will realize that the cost of selling washing machines is higher than the average cost of selling the general line of appliances. They must be sold on deferred payments, which means high cost of financing. In the selling of them the highest type of salesmen's service is required, if satisfactory results are to be obtained, and servicing, which custom dictates should be furnished free by the dealer, is costly.

Yet I can point out to you large companies, which generally speaking, have some ideas of making profits, and also some ideas of their responsibilities to the dealers, large and small, in their territory, which plume themselves greatly on selling a large number of lowpriced washing machines at a gross profit of 33 1-3 percent, when their average cost of doing business on the entire appliance business is 37½ percent. This means to me that their cost of selling washing machines is probably over 40 percent. The central stations' own immediate loss of money is the matter of least importance in their transactions. The serious thing is that such policies check the whole washing machine industry in a city, by establishing in the minds of the people a standard of value of washing machines which will be hard to dislodge later, at which no well constructed washing machine can be sold without absolute loss to the dealer, to say nothing of a reasonable profit.

In my judgment, the central station as a leader in the community should pick out as its standard the highest grade of washing machine which it can find, and charge a price for that machine which will cover its costs and such a profit that the small dealer can compete at the same price and make a reasonable profit; then put all the prestige and energy of the central station behind the article, knowing that every one of its customers who buys one will get good and fair value. They will get the best machine made, and get it on a basis which only yields a very reasonable profit to the distributor.

This will have the following result: Many of the independent dealers will sell lower grade machines which go at a lower price. They will be able to sell more of them, and they will on this class of machines get a price which will let them out with a profit, and the washing machine business will thrive and prosper in the community, because it will yield a profit which warrants the necessary effort to put out a lot of machines, and a lot of machines can never be put out in any community even at a ruinous price without a great deal of effort.

The washing machine is something which the public does not buy. It must be sold to them. On the other hand, its very great value is evidenced by the fact that when a family has used one for six months, and has learned to appreciate thoroughly what it means in the saving of time, energy, good looks and clothes, you will find that there will not be an article of furniture in the entire home which they will not give up, rather than the washing machine. This is only another illustration that the public as yet does not know the value of electrical appliances, and when it does fully grasp the possibilities of efficiency, economy and helps in raising the standards of living, this business will increase tremendously.

Before we get off the subject of the washing machine, however, I want to take you into confidence. In my experience in Chicago we have been selling a machine for $192.20 which costs the Commonwealth Edison Company $94.50 in lots of five or more. When many of the other companies in more or less of a panic reduced their prices on washing machines, this company increased its price, as it had found that it was obliged to do so in order to sell a dependable machine and get out whole. Many of the people in the company, especially the salesmen, felt that the increase in price would cut down the sales very decidedly, but the reverse has been true, due to the increased advertising and the increased salesmen's commissions which were possible.

The company nets more money per machine, and sales are practically double what they were eight or ten months ago under the former policy. In fact this company is selling at this

Statement of Average Unit Cost of Selling New Washing Machines for the Months of June and July, 1922

	June		July	
Average net selling price	100.0%		100.0%	
Average cost per machine sold	56.6%		58.0%	
Gross profit per machine		43.4%		42.0%
Average expenses per machine sold—				
Selling:				
Commissions	17.%		18.7%	
Bonus	0.8%		0.8%	
Premiums	1.8%		2.7%	
Demonstrating	1.4%		1.7%	
Salaries, adjustment and sundries	1.6%		2.2%	
Delivery and salesmen's automobiles	4.0%		5.7%	
Repairs	1.1%		1.6%	
Total selling	28.5%		33.4%	
Buying	2.1%		2.5%	
Occupancy	3.6%		4.2%	
Publicity	4.9%		4.6%	
Administrative	8.5%		12.2%	
Overhead expenses	19.1%		23.5%	
Total expenses		47.6%		56.9%
Average loss per machine		4.2%		14.9%

Average Cost of Selling Type "L" Washers, Treating Premiums As a Reduction of Price Instead of a Selling Expense

	June		July	
List price	100.0%		100.0%	
Average allowance	1.2%	2.9%		
Average premium	1.7%	2.5%		
Average cash discount	0.3%	0.6%		
Average price reduction	3.2%		6.0%	
Average selling price	96.8%		94.0%	
Cost of Type "L" Washer	54.0%		54.0%	
Gross profit per Type "L" Washer		42.8%		40.0%
Expenses as above, exclusive of premiums		45.1%		51.9%
Average loss per Type "L" Washer		2.3%		11.9%

price more washers today in Chicago than are sold in the city of all other makes of washers put together, notwithstanding the fact that Chicago is one of the most highly competitive washing machine markets in the country.

But now comes the point which I wish to make particularly. There were so many people in the company who believed that we were selling at too high a profit that the writer called in the services of unbiased expert accountants to analyze the washing machine business, and presented herewith you will find the results for the months of June and July of last year in percentages. While some of the costs may be open to question, and while a lot of you may think that you can do business a great deal better than the company in question, they are the actual costs. To the very great surprise of everyone, they showed that even on these higher prices the machines were being sold at a loss instead of a profit.

You can well imagine that this was a very great shock, when we were proceeding from the standpoint of trying to justify a relatively high price, and I say to you here that notwithstanding the opinions you have, if you will go into your figures and have your experts analyze them as thoroughly as in the company to which I refer, and get as broad a grasp of the situation, you will I am satisfied find that the final net profits on the washing machines you are selling are not on a satisfactory basis.

The situation with reference to the sale of washing machines while extreme is more or less typical of the entire merchandising situation, and it is time for everyone in the business to give careful attention to these features.

Novel Heat Display

Central Station and Manufacturer Build Sales for Electragists

It was a clear, snappy evening in New York City. Dinner time was o'er and the din of metropolitan life was at its height. Theatre going time had arrived, and coupled with the bustle of early holiday shoppers as they went in and out of the attractive Broadway shops, the crowds as they surged to and fro in quest of the most enticing drama or the greatest screen scandal gave one the impression of so many ants taking possession of a tree trunk. First a group here, then a group there. And all the time going. Almost perpetual motion it seemed.

But suddenly, like a bolt out of a clear sky, something happened. The crowd stopped—a portion at least. People gazed upward, fixed their eyes on something, smiled, and nodded approval. Another instant and they were on their way again. What was it?

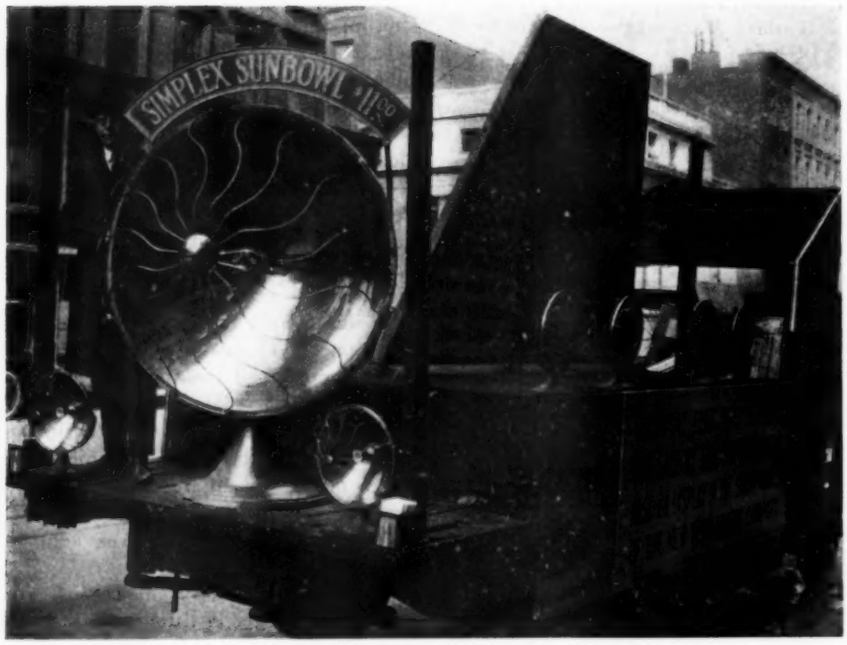
It was merely the heat from an electric heater. That was what had caused the change. And looking closer it was found that a giant electric radiant heater in operation was mounted on an electric truck, the bowl of which was being moved in different directions so that its glow of heat would travel accordingly, and the truck was kept in motion along the street.

Some stunt, you say? It was. In the opinion of Roger Williams, New York manager for the Simplex Electric Heating Company whose equipment was used in coöperation with the New York Edison Company to make the display, it marks the first event of its kind. Mr. Williams is enthusiastic about the results and says it worked out most advantageously for the electragists in the territory covered by the route of the moving display.

The territory covered was the metropolitan area of New York City and Brooklyn. The outfit started out in the morning and kept on the move about five hours or so and then the storage batteries were charged. It took several hours generally to completely charge the cells, when the display was set forth again to run for from three to five hours in the afternoon and evening.

As a rule no heaters were sold in the course of the display's journey. On occasions, however, when experiments at actual selling were tried the results were almost unbelievable. Eleven devices were sold one night in thirty minutes while the outfit stood outside of a New York hotel. To demonstrate the selling value of the display, when it passed on the street by one woman, she yelled out, "I want one of those things right away to take home with me."

The heater itself—the bowl—was four and one half feet in diameter, and it took one hundred and thirty-two 350 ampere hour cells to furnish current for it. Four and one-half tons of battery were loaded on the truck which carried the display. The complete display, including the man who operated the heater, is shown in the accompanying illustration. The picture on the up-



The Novel Heating Display Which Created All Kinds of Favorable Comment on the Value of Electric Heat

right sign was an actual oil painting, clearly pointing out the action of radiant heat.

It was indeed strange, almost uncanny, to see how people reacted who came into contact with the glow of heat, as it was played on them from the moving vehicle. Groups looking at store windows or other attractions were made to look around to see where the sudden heat came from, even at a distance of twenty-five or thirty feet. The fact that the wind did not interfere with the action of the heat, only tending to cool the surface of the reflector, caused considerable astonishment. Dozing chauffeurs came to their senses in jig time. Concerted discussions among bystanders were mercilessly interrupted. Even workmen couldn't resist the sudden warmth. And no matter how one felt when distracted from the thing in hand by such a sudden burst of heat, as soon as one had looked up and recognized the source of the warmth, whatever anger or ill feeling that had been aroused was immediately dispelled.

Printed matter telling the story of the heater to be used in the home was carried and was given out as opportunity afforded. Local electragists were unanimous in their praise of the idea saying that their business in heaters immediately jumped when the display was being used. While naturally the kind of heater displayed had the greatest relative sale, nevertheless all kinds were promoted by the ingenius propaganda. While the display was on the move it was evident that only the idea of electric heat was recognized by the average person, but when it stopped of course every detail was carried away by the onlookers and the specific products shown had the advantage of other products of its kind so far as potential sales to those onlookers were concerned.

It was a great idea all right and contained a fine story of coöperation between the central station and manufacturer to build sales for electragists. "We'll warrant," says Mr. Williams of the Simplex Company, "that the people of New York and Brooklyn learned more about radiant heat during the time that the electric heater truck was being shown than they ever knew before."

Curbstoner is Problem

Journal of Electricity Asks Industry for Solution

In a past issue of the *Journal of Electricity and Western Industry* the leading editorial expresses itself in no faint terms on a problem that is of vital importance to every electragist. Under the caption "Straws Show Which Way the Wind Blows," Editor Sibley said:

Any observer of climatic changes within the electrical industry who has been watching the cross currents, eddies, and local showers might well forecast a storm brewing. To be exact, all does not appear to be well, particularly in the merchandising and contracting branches of this industry.

It is generally admitted that thousands of dollars of advertising spent for the promotion of convenience outlets and better residence wiring upon which rests the sale of electrical appliances, are being wasted because the major portion of residence wiring is being done by irresponsible curbstone contractors who are without the pale of organized education work, and who are interested only in doing the job cheaply.

Recognized contractor-dealers and strictly electrical stores are being cast aside as the preferred medium through which electrical appliances are merchandised. Drug, hardware, department and furniture stores are being used in preference. While this may cause dissatisfaction in some quarters, it is inevitable that these mediums should be utilized in order to properly distribute the increasng number of appliances manufactured. Distribution of appliances cannot be restricted to electrical stores.

But the problem of the curbstoner is a real one and demands attention. Different men within the electrical industry have gradually been awakening to this fact, and have been variously casting around for a remedy. One large jobbing house has sought to overcome the first evil mentioned by having a distinguishing trademark, signifying quality, placed on all of its wares. The electrical contractor organizations in California are seeking to establish a similar trademark, to be used by reputable firms. There is general dissatisfaction with present conditions.

Little can be accomplished by individuals and organizations working alone. It would seem that the various coöperative campaigns and leagues which have been organized to fulfil just this purpose should be the medium through which these evils should be corrected. If these organizations are not properly fitted by personnel, finances, or inclination to undertake this work, they should be so fitted at once.

A combination of organizations, having the wholehearted backing of the entire electrical industry in the west, should study this problem and devise a solution.

If the establishment of a trademark which will indicate quality of workmanship, quality of material and just and reasonable price, is the answer, then such should be designed. However, any such symbol that does not have the assistance and backing of everyone is doomed to failure.

·CONTRACTING·

A Department Devoted to the Study and Discussion of the Practical Problems of Electrical Contracting

ALLAN COGGESHALL Associate Editors HENRY F. RICHARDSON

EDITORIAL ANNOUNCEMENT

After a period of nearly four years the interesting articles which have been running in the Contracting Department have been brought to an end. This department became a regular feature of the magazine in May, 1919, since which time the leading contributions appearing herein have been ably contributed by Allan Coggeshall and Henry F. Richardson.

The purpose of these articles has been to carry our readers, in a sequence of issues, completely through an electrical installation from office organization to the clean up of the work, including considerations of financing on the basis of contract terms, job organization, the choice of suitable and economical methods of installation in the various types of buildings, the selection of materials, devices and apparatus, and how the contractors' function should be made complementary to the function of the engineer or architect.

Many contracts which show but little profit, and sometimes show practically none, might have been made more profitable by a different handling of the work. The contributing editors have endeavored throughout these discussions to suggest profitable plans for organization and management, to help the man on the job to avoid the common errors of installation, and to correct false economies which are likely to result in unwarranted expense to the contractor.

Roughly, the discussion has aimed to cover in more or less detail the following sequence of phases of the work of making a complete installation:

1. Overhead or home office organization.
2. The work preliminary to the start of the job.
3. Roughing.
4. Finishing.
5. Clean up.

With the appearance last month of the article, "100 Percent Completion of Job," the series was completed. In order now to determine the conduct of this particular subject it is hoped that honest expressions of opinion may be forthcoming from our contracting readers relative to the interest and value of such matter in the past and what editorial treatment of their work will be of greatest benefit in the future.

Suggestions relating to installation problems are solicited and any ideas bearing on such questions will be carefully considered. If the series just ended did not fully solve some of the perplexing things that are met with on the job, let there be further discussions.

Please reply at once, and of course all communications will be held in strict confidence. It is the earnest desire to publish in the Contracting Department, as in all other departments of the magazine only matter that is of the most interest and value to our readers, and accordingly this opportunity for a frank expression of opinion on their part is cordially given.—The Editor.

Chats on the National Electrical Code

By HUBERT S. WYNKOOP, M. E.

Monthly Discussion of National Electrical Code Practices by Well Known Authority in Charge of Electrical Inspection, City of New York

Special Motor Generator Sets

If a motor generator set is designed especially for operating motion picture arcs it will drop its voltage if short circuited. In such an installation it is not only unnecessary but actually objectionable to place fuses in the direct current circuit.

Leads of Hot Devices

The best practice seems to require that hot appliances such as theater stand lamps and borders and other portables be wired with slow burning leads extending out about 18 inches and carrying a suitable plug to which approved rubber covered cable may be attached. Otherwise the rubber cable is apt to be carried close to the appliances or the slow burning leads extending many feet to the permanent wiring.

Bell Wires in Conduit

May call bell wires fed from a lighting circuit through a transformer or a direct current bellringer be placed in the same conduit with electric light wires? I should rule against this, as we would have two "different systems" in one pipe, which the Code prohibits. If 110 volt wiring and bells are employed, then we cannot raise the issue of different systems; and it follows of course that transformers or bell ringers will not be employed.

Disconnecting Switches

It is becoming customary to install disconnecting switches in the primary lines in a transformer vault, so that a person working about a transformer or a high tension motor may make sure that the apparatus is dead. Recent developments are in the direction of a separate switching vault containing truck-type switches. Here the truck feature of the device permits it to be

used as a disconnecting switch as well as a service switch.

We have no specifications for disconnecting switches; but if one buys such a switch from one of the reliable manufacturers the spacings, etc., will probably prove ample. It is proper to insist upon a name-plate or other suitable marking, in order to eliminate switches of more or less amateur make. The National Electrical Safety Code goes quite deeply into this subject.

Fusing House Feeders

It seems difficult to make some contractors understand why a main line cutout is demanded next to the service cabinet when the feeder is smaller than No. 10. None of the lighting companies here will bother with service fuses smaller than 30 amperes, and these they seal. A No. 14 wire has a rated capacity of only 15 amperes; so that if it is connected directly to the service cabinet it is 100 percent overfused. The contractor has the option of using at least No. 10 for his feeder, or making provision for proper fusing.

Grounding Elevator Motors

A contractor resently protested the violation notice to the effect that the frame of the motor was not grounded. We found that this particular motor was set in a basement and that holding bolts ran down through the foundation. We found further that the frame was grounded through the drum, cables and steel frame of the elevator runway. The violation was withdrawn.

Two Wires Under One Binding Screw

We require that two wires placed under one binding screw shall be soldered together. Recently we were asked to accept washers in lieu of the soldering. Inasmuch as the purpose of the soldering is to keep the wires from rolling on each other and slipping out, there seems to be no good reason for objecting to the alternative of washers, where the screw is long enough to accommodate them.

Thermal Cutouts

Note particularly that the thermal cutout (a plug with left hand thread) designed to protect wires or motors does not take the place of the fuse required by the Code.

Socket Husks

My item in last month's Chats has brought the following comment from Lighting Fixture Dealers' Society of Cleveland: "In Cleveland our working rules require the use of split steel washers in any location where the mechanical joints cannot be cemented, soldered or a set-screw used. We find that this is working out very satisfactorily in holding socket husks tight, and eliminating the loosening of the socket when lamps are inserted or removed."

This helpful comment is gratefully acknowledged.

Curb Outlets for Pushcarts

In some sections of this city push carts are permitted to stand indefinitely at the curb. Formerly these were generally lighted by the most flimsy kind of temporary flexible cord wiring run through the fanlight over the store door to a stake lashed to the pushcart.

We instituted a crusade, with the result that attempts are now being made to provide an electrical connection of a more permanent nature—namely, by means of conduit or lead sheathed armored cable carried to a flush outlet in the sidewalk just back of the curb. The outlet consists of a marine type watertight box and plug.

We approve this, when the sidewalk circuit is equipped with a switch and cutout placed just inside the wall of the building. Canvasite or Crefield cord gives good results when used as the portable cable.

Making of Service Cabinets

Some manufacturers are putting out service cabinets marked for 125 volts and containing provision for the addition of a neutral strap connection which fits them for 3-wire, 110-220 volt. wiring. Inspectors are not always sure whether they should accept a cabinet rated at 125 volts when used for 220 volts. Since all switch and fuse spacings are designed for the higher voltage, the name plate rating of the cabinet should be disregarded.

Unfused Taps From Risers

It is the general practice of inspection departments to accept unfused taps of not over 188 inches in length, leading from a riser to a distributing panel or bank of cutouts. Particularly where cutouts are used it is impracticable to carry into them wires larger than No. 4; so that a tap must be taken from the riser if the latter is of larger size. A No. 4 tap would be of ample size to supply a 70 ampere cutout bank. This scheme might be applied to each floor, and we might have a 4/0 riser with No. 4 taps.

Occasionally a contractor forgets that we permit the small tap *only when it is large enough to supply the cutout bank.* In one case we were asked to approve a 4/0 power feeder (225 amperes) leading to a bank of two double branch cutout blocks, the feeder ending at the first block and being extended by No. 4 (70 amperes). In giving our refusal, we suggested that four single branch blocks be used, that the riser be carried past the farthest block, and that four No. 4 taps be employed, each feeding one branch block. The branch blocks have a capacity of 60 amperes each, while the No. 4 wire is rated at 70 amperes.

The 4000-Watt Rule

Few contractors understand why the 4000-watt provision was ever placed in the Code (see No. 23d, 3rd par.). In lighting large areas by large gas-filled units it was found that the mogul socket will not take a wire larger than No. 12, and that only two 500 watt lamps or one 1000 watt lamps could be placed on a circuit if the 1320 watt rule were to be observed. The alternatives then were to provide a branch cutout on the main for each 1000 watts, or to cover the ceiling with a network of circuits running back to a panelboard. After conferences with representative contractors and consulting engineers it was decided to expand the 660 watt rule while retaining its underlying principles.

This rule considers a No. 18 fixture wire to be properly protected by a branch circuit fuse approximately *three times* the rating of the wire (3 amperes: 10 amperes). The 4000 watt rule considers the No. 12 fixture tap to be properly protected by a fuse approximately *twice* the rating of the wire (20 amperes: 35 amperes). The newer rule contemplates a No. 8 circuit fused to 35 amperes and carrying unfused taps of No. 12 to the lamps—eight 500 watt lamps, or four 1000 watt lamps. It will be observed that the 4000 watt rule is somewhat more conservative than the 660 watt rule.

WHO carries your Liability Insurance? The National saves you money on this.

ORGANIZATION ACTIVITIES

STATE CHAIRMEN AND SECRETARIES

State	Chairman	Secretary
ONTARIO, CANADA:	Harry G. Hicks, 203 Church St., Toronto	J. A. McKay, 24 Adelaide St., W., Toronto
BRITISH COLUMBIA:	C. C. Carter, 739 Hastings St., Vancouver	R. Graham, 929 Pender St., W.
COLORADO:	J. Fischer, 213 15th St., Denver	H. Alex Hibbard, E. & C. Bldg., Denver
CONNECTICUT:	Tryon Smith, 247 State St., New London	
DISTRICT OF COL.:	Frank T. Shull, Conduit Rd. and Elliott St. Washington	H. R. Harper, 635 D St., N. W., Washington
FLORIDA:	T. E. Satchwell, Jacksonville	M. A. Ladd, 108 W. Bay St., Jacksonville
INDIANA:	T. F. Hatfield, 102 S. Meridian St., Indianapolis	A. I. Clifford, 507 Odd Fellows Building, Indianapolis
IOWA:	Louis L. Corry, 510 Brady St., Davenport	
KANSAS:	C. S. Smallwood, 1017 N. 5th St., Kansas City	Arthur Tucker, 619 Jackson St., Topeka
LOUISIANA:	James M. Maloney, 807 Poydras St., New Orleans	W. H. B. Spangenberg, 406 Marine Bank Bldg.
MARYLAND:	A. C. Brueckmann, Keyser Bldg., Baltimore	C. Philip Pitt, 7 St. Paul St., Baltimore
MICHIGAN:	Henry Roseberry, 41 Pearl St., Grand Rapids	H. J. Shaw, 613 Lincoln Bldg., Detroit
MINNESOTA:	John M. Roberts, 1589 Selby Ave., St. Paul	Arthur P. Peterson, 2395 University Av., St. Paul
MISSOURI:	Oscar L. Fickie, Kansas City	A. J. Burns, 533 Delaware St., Kansas City
NEW JERSEY:	Geo. E. Davis, 23 Central Ave., Newark	Elmer D. Wilson, 23 Central Ave., Newark
NEW YORK:	F. A. Mott, 29 St. Paul St., Rochester	
OHIO:	C. L. Wall, 212 S. Main St., Akron	Walter R. Keefer, 939 E. McMillan St., Cincinnati
PENNSYLVANIA:	R. W. Keck, Allentown	M. G. Sellers, 1518 Sansom St., Philadelphia
TENNESSEE:	P. W. Curtis Chattanooga	J. A. Fowler, 10 S. Second St., Memphis
WISCONSIN:	L. G. Ross, 1305 Tower Ave., Superior	H. M. Northrup, 25 Erie St., Milwaukee

LIST OF LOCAL ASSOCIATIONS AND MEETINGS

State and City	Local Secretary	Street Address	Time of Meet.	Place of Meet.
ALABAMA				
Birmingham	J. R. Wilcox	313 No. 19 St.	Tues. 10 a. m.	---
Mobile	Frank Sigler	Sigler Elec. Co.	Wed. 5 p. m.	Members' Offices
ARIZONA				
Phoenix	A. H. Rosenburg	---	Tues. 4 p. m.	Bldrs. Exc.
CALIFORNIA				
Berkley	J. M. Gregory	Pacific Bldg.	Fri. 8 p. m.	Pacific Bldg.
Covina	F. Rambo	---	1st & 3rd Mon.	Ontario
Long Beach	O. W. Newcomb	308 E. 4th St.	Tues. Ev'g.	Spaulding's
Los Angeles	Irvin C. Bruss	118 E. 3d St.	---	---
Oakland	J. Gregory	Pacific Bldg.	Tues. 8 p. m.	Pacific Bldg.
San Francisco	A. Elpins	165 Jessie St.	12 Noon, Thurs.	States' Cafe
Van Nuys	Los Angeles Asn	---	Tues. 6:30 p. m.	Pin Ton Cafe
COLORADO				
Denver	Alex Hibbard	E. & C. Bldg.	1st and 3rd Fri.	DG & EL Aud't.
Manitou	---	---	Friday Nights	Col. Springs
Pueblo	H. Ashcraft	---	2nd Tues.	Commerce Club
CONNECTICUT				
Hartford	Mr. Cook	Hart & Hegeman	1st Wed.	Hartford
New Britain	F. Mulvehill	---	---	---
Waterbury	D. Neth	Conn. Lt.& P.Co.	On Call	192 Grand St.
DIST. COL.				
Washington	---	---	2d Thurs.	Dewey Hotel
FLORIDA				
Jacksonville	W. L. Joseph	155 E. Forsyth	1st Tuesday	208 Realty Bldg.
Miami	C. E. Pullen	Pullen-Zoll Co.	---	---
GEORGIA				
Atlanta	Cheny Emerson	Irz & Baker Sts.	Thurs. 12:30	Dafodil Res.
ILLINOIS				
E. Moline	E. J. Burns	Rock Island	Once a month	Bldrs. Ex.
Chicago	J. W. Collins.	179 W. Wash. St	2nd & 4th Wed.	Lmbrmns Ex.
Decatur	E.O. Weatherford	114 E. Wm. St.	1st. Wed.	Y. M. C. A.
Springfield	C. A. Meadow	107 E. Ad'ms St.	---	---
E. St. Louis	C. F. Broderick	317 E. Bro'dw'y	Sat. 2 P.M.	Arcade Bldg.
La Salle	Ed. Blaine	---	1st & 2nd Tues.	Post Hall
Rock Island	E. J. Burns	219 18th St.	1st & 3rd Mon.	219 18th St.
Streator	Wm. Schroder	613 Tyler St.	---	---
INDIANA				
Evansville	I. A. Welburn	404 Main St.	Ev. Fri.	Y. M. C. A.
Gary	A. B. Harris	570 Washington	---	---
Indianapolis	G. W. Ball	Peoples Bk Bldg.	1st & 3rd Thurs.	Comm. Club
South Bend	Mr. Moran, Jr.	832 N. St. Louis	1st Tues.	B. & T. Ex. Bldg
Warsaw	L. F. Meyers	120 E. Market St.	Wed. Ev'g.	---
IOWA				
Davenport	Louis F. Cory	---	Mon. 6 p. m.	Chamber Com.
Sioux City	F. H. Abbot	---	Mon. 6 p. m.	Jackson Hotel
Waterloo	H. L. Hileman	600 Bluff St.	---	---
KANSAS				
Topeka	H. S. Lee	816 Kansas Ave.	Mon. Noon	Elk's Club
Wichita	L. A. Harris	446 N. Main	Ev. Tues. 7.30	United Elec. Co.
KENTUCKY				
Louisville	Walter Diecks	528 W. Jefferson	2-4 Thurs.	B. of T. Bldg.
Paducah	W. R. Kitterjohn	---	Last Thurs.	---
LOUISIANA				
New Orleans	B. Spangenberg	410 Carroll St.	1st Weds.	Teocalli Hall,
Shreveport	Percy Elliott	Elliott El. Co.	Ev'y Monday	---
MAINE				
Portland	N. S. Boothing	222 Middle St.	On call	---
MARYLAND				
Baltimore	C. P. Pitt	7 St. Paul St.	3d Tues.	Eng'rs. Club
MASSACHUSETTS				
Boston	---	---	3d Thurs.	Boston City Club
Fitchburg	R. M. Gowell	---	1st Mon.	Fay Club
Haverhill	H. W. Porter	24 West St.	2d Mon.	El. Lt. Sta.
West Medford	H. J. Walton	Malden El. Co.	Monthly	Various
Worcester	J. W. Coghlin	259 Main St.	2d Thurs.	44 Front St.
MICHIGAN				
Battle Creek	---	---	Ev'y oth'r Tues.	Post Tavern
Detroit	H. Shaw	613 Lincoln Bldg	Last Thurs.	G. A. R. Hall
Flint	J. Markle	718 S. Saginaw	---	---
Grand Rapids	Henry Romyn	40 Ionia Av.N.W	Tues. Noon	Ass'n of Com.
Kalamazoo	M. Randall	Exch. Place	---	Cham. Com.
MINNESOTA				
Duluth	Alfred L. Foster	210 W. 1st St.	1st Tuesday	---
Minneapolis	A. P. Peterson	2395 University	2d & 4th Tues.	Builders' Exch.
St. Paul	A. P. Peterson	Ave., St. Paul	2d & 4th Mon.	Elk's Club
MISSOURI			6:30 P. M.	
Kansas City	R. L. Hutton	212 Admir'l Blvd	Tues. Eves.	University Club
St. Louis	Ben Grieb	904 Pine St.	1st Wed.	Am. Hotel
NEBRASKA				
Lincoln	G. G. Kingham	142 S. 12th St.	1st & 3d Mon.	C. of C. Bldg.
Omaha	J. B. Coningham	---	1st & 2nd Mon.	Various
NEW HAMPSHIRE				
Portsmouth	F. C. Hatch	Kittery	2d & 4th Wed.	---
NEW JERSEY				
Atlantic City	F. P. Wright	16 Ohio Ave.	1st Thursday	Malatesta Hotel
Jersey City	Wm. Doellner	743 Bergen Ave.	---	P. S. Bldg.
Long Branch	Chas. Maggs	462 Bath Ave.	1st & 3rd Mon.	Comm. Hotel
Newark	Geo. E. Davis	23 Central Ave.	1st Monday	23 Central Ave.
Paterson	H. M. Dessix	88 Ellison St.	Last Friday	P. S. Bldg.
NEW YORK				
Albany	Chas. Russell	Box 390	3d Thursday	Pekin Rest'nt
Binghamton	A. H. Hyle	---	---	---
Brooklyn	H. F. Walcott	44 Court St.	1st Mon.	Cham. Com.
Buffalo	E. P. McCormick	555 Wash. St.	Fridays	507 Elec. Bldg.
Cooperstown	B. B. St. John	Oneonta	3d Tues.	Vanon
Endicott	A. H. Hyle	Binghamton	Tues.	Cham. Com.
Glens Falls	W. F. Combs	21 Main St. S.	---	---
Jamestown	Henry Lund	309 Main St.	3d Mon.	Mfgrs. Ass'n.
Kingston	M. C. Rivenberg	---	---	---
Nassau-Suffolk	H. J. Wick	Bay Shore	---	---
New Brighton	E. L. Taylor	Tottenville	---	---
N. Y. Sec. No. 1	J. P. Ryan	26 Cortlandt St.	1st Thurs.	Penn's Hotel
Independent	C. J. Christesen	101 W. 83d St.	2nd & 4th Wed.	226 W. 58th St.
Sec. No. 3	L. F. Luedecke	---	---	---
Olean	H. C Thuerk	Olean L.&P. Co.	Monthly	Various Stores
Oneonta	B. B. St. John	---	3d Thursday	---
Rochester	H. F. Janeck	29 St. Paul St.	1st. & 4th Mon.	Eggleston Hotel
Saratoga Springs	W. F. Camp	S. Glen Falls	2d & 4th Thurs.	'ara'ga & G. Fa's
Schenectady	Mr. Spengler	McClellan St.	Subject to call	---
Syracuse	H. N. Smith	P. O. Box 809	1st & 3d Monday	---
Tottenville	W. Taylor	Tottenville, S. I.	1st & 3d Thurs.	St. George, S. I.
Troy	H. W. Boudey	First St.	1st Tues.	Gas Office
Utica	Mr. Hall	Gray Elec. Co.	1st. Tues.	Elks' Club
Westchester	I. W. Austin	White Plains	---	---
Watertown	L. B. Smith	Roth Block	3d Fridays	Utilities Bldg.
Woodmere	Geo. La Salle	Westbury	---	---
Yonkers	Mr. Mayer	Manor House Sq	Monthly	---
OHIO				
Akron	C. L. Wall	212 So. Main St.	Monthly	2d Nat. Bk. Bl'g
Bellaire	J. Blumenberg	Bellaire	Call of Sec'y	Bellaire
Cincinnati	W. R. Keefer	939 E. McMillan	Tues. 3 P. M.	Cham. of Com.
Cleveland	Geo. D. Bury	Elec. League	1st & 3d Thurs.	Hotel Statler
Columbus	O. A. Robins	243 N. High St.	Every Thurs.	Girls Ath'ic Club
Dayton	O. J. Osmond	41 Fountain Av.	1st & 3d Mon.	Bldrs. Exchange
Springfield	J. R. Yost	---	On call	Various
Steubenville	D. C. Hartford	---	1st Wed..	Nat. Ex. Bank
Toledo	F. J. Lucas	---	On Call	M'fs. & Mfrs. As.
Youngstown	F. F. McBride	Builders Exch.	Mon. Noon	Y. M. C. A.
OREGON				
Portland	F. R. Whittlesey	212 Henry Bldg.	2d & 4th Monday	Cham. of Com.
PENNSYLVANIA				
Allentown	A. Hill	Bethlehem	Monthly	---
Bethlehem	A. H. Hill	510 W. Main St.	---	---
Catasauqua	W. T. Kleppinger	---	Last Thursday	---
Dubois	C. E. Blakeslee	---	Monthly	---
Easton	G. E. Hill	Bethlehem	Monthly	---
Erie	Earl Stokes	Bldrs. Exch.	---	Bldrs. Exch.
Lancaster	A. Deen	---	3rd Friday	Und'w't'rs Offce
Philadelphia	M. G. Sellers	1518 Sansom St.	2nd Thurs.	1518 Samson St.
Pittsburgh	Joe Jaques	McCance Bldg.	1st. Friday	Various
Scranton	A. J. Fowler	Bd. of Tr. Bldg.	Tues.	Zenke's
St. Marys	C. E. Blakeslee	Dubois	Mon.	---
Wilkes-Barre	Ambrose Saricks	---	2d & 4th Thurs.	---
York	A. E. Harris	E. King St.	2d & 4th Tues.	---
SOUTH CAROLINA				
Columbia	E. L. Cashion	Sumter, S. C.	---	---
Greenville	E. C. DeBruhl	Ideal Elec.	---	---
TENNESSEE			Wednesday	
Chattanooga	Carl Schnider	412 Kirby Av.	Noons.	Manhattan Cafe
Knoxville	H. M. Moses	615 Market St.	Monthly	Rwy. Lt. Co.
Memphis	H. A. Street	285 Madison Av.	Ev. other Wed.	Allyn Cafe
Nashville	J. B. Mullen	Arcade	1st & 3d Wed.	Tularie Hotel
TEXAS				
Dallas	H. A. Brewster	409 S. Eway	On call	409 S. Eway
UTAH				
Salt Lake City	Gus. Forsberg	69 E. 4th So.	Wed. 12:15 p.m.	Newhouse Hotel
VIRGINIA				
Lynchburg	W. M. Elliott	Lynchburg	1st. Wed.	Local Stores
Norfolk	K. D. Briggs	Arcade Bdg.	Wednesdays	Old Col. Clb.
Richmond	W. A. Cutlett	Jeff. & Grace Sts	---	---
WASHINGTON				
Seattle	J. R. Barry	Pantorges Bldg.	Thursdays	Elks Club
WISCONSIN				
Green Bay	John B. Tingley	223 Cherry St.	1st Thurs.	Nicolet Bldg.
Milwaukee	Thos. W. Nixon	719 Majestic Bld.	2nd Tuesday	Maryland Hotel
Racine	F. H. Patrick	1545 W. Blvd.	1st. Tues.	Racine Bldg.
CANADA				
Guelph	C. E. B. Grinyer	43 Quebec St.	---	---
Hamilton	K. J. Donoghue	c/o N. Elec. Co.	---	---
Kitchener	O. S. Leyes	c/o Doerr El. Co.	---	---
Ottawa	A. C. McDonald	128 Osgoode St.	Mon. 8:00 p.m.	Elec. Insp. Office
Toronto	J. A. McKay	24 Adelaide St.	2d Tues.	Bd. of Trade
Vancouver	R. Graham	929 Pender St.	Ev'y Tuesday	724 Pacific Bldg.
Windsor	A. H. Cook	609 Moy Ave.	---	---
Niag'ra Penins'r.	W. H. Mackenzie	609 Moy Ave. W.	---	---

New Field Men Now at Work

Two Representatives to Cover Eastern and Central-Mountain Territory Respectively

One of the most important and most valuable activities of the Association of Electragists will always be direct contact between the Association and the individual member through personal calls by fieldmen. During the past three years the work of maintaining this contact has been carried alone by Special Representative Davis, but with the entire United States and Canada to cover such personal contacts have necessarily been discouragingly infrequent.

Under the reorganization plan of direct membership between the individual and the Association of Electragists the opportunity has come to greatly extend the field work of the Association. Two additional fieldmen have already been appointed under the direction of Mr. Davis as manager of the newly created Department of Development and Promotion, and others will be appointed as soon as suitable men can be found to fill the position.

L. O. Whitten was employed by the Association on December 15th and after several weeks' intensive study of Association work at headquarters entered on his duties as field representative for the Eastern Division the first of January. Mr. Whitten is now at work in New England and will probably be in that territory for several months, although he will adapt his schedule from time to time to the best needs of his entire territory.

Arthur P. Peterson, who has been the efficient secretary of the Minnesota State Association of Electrical Contractors and Dealers for several years, will enter upon his duties as field representative in the Central and Mountain territory on the first of February.

L. O. Whitten is unusually well fitted for his position as field representative and brings into his work a good knowledge of industrial engineering and business efficiency which will be of great value in his helping the members with their individual problems.

Mr. Whitten was for a number of years connected with the Matthews Engineers, Incorporated, of Boston, and during the past two years has been a director of the company, and in charge of all factory installation. Mr. Whitten is an overseas veteran, having served for over a year in France in the medical corps. He has a very pleasing personality and a sincere winning way of explaining his subject, and we feel certain that he will soon become a very popular and welcome visitor among the members.

Mr. Peterson has had a varied experience. He is a graduate of the Uni-

L. O. Whitten

versity of Minnesota, College of Engineering, and the Harrington Emerson Institute of Efficiency. He has also studied the works of several authorities on the various phases of factory management and industrial organization.

For four summers during his university experience Mr. Peterson did sales

Arthur P. Peterson

work for the Current Literature Publishing Company of New York, three of which he had charge of the company's student salesmen from the University of Minnesota.

After being an instructor in radio telegraphy at the William Hood Dunwoody Institute, Minneapolis, he resigned to go to the South Dakota State School of Mines as a radio expert. He entered the employ of the Electric Machinery Company of Minneapolis, and held the positions of assistant to the service engineer, secretary to the general manager, and service engineer, respectively. A temporary connection was made as engineering assistant to the chief engineer of the Tri-State Telephone and Telegraph Company.

Mr. Peterson spent three years as an instructor at the University of Minnesota in the department of drawing and descriptive geometry before becoming secretary of the Minnesota State Association of Electrical Contractors and Dealers, and the Minneapolis and St. Paul District Associations, which positions he held prior to entering the work of the A. E. I.

A. E. I. Special Committee

A special committee of the Association of Electragists was appointed at the last Executive Committee meeting in Cincinnati to study the recommendations made by Special Representative Laurence W. Davis in his report before that body.

Studies of the recommendation were made by the committee and a meeting was called at Headquarters in New York City on January 5 to consider and act upon these recommendations. Those present were as follows: P. H. Jaehnig, chairman, James R. Strong, Laurence W. Davis, Farquson Johnson. The other members of the committee, J. C. Hatzel and L. K. Comstock, were unable to attend, but they both have approved the committee report.

It was decided to establish a research department under the title of "Department of Promotion and Development" with Mr. Davis in charge.

It was reported that the work of revising the Data Book of the Association is now in process and it is hoped that the new books will be ready within a short time.

The committee agreed that a census of our members should be taken and the character of their business shown on the membership list by symbols, as follows:

E—Contractor-dealer with store.
C—Contractor without retail store.
D—Dealer doing no construction work.
R—Specializing in residence wiring.
M—Operates a motor repair shop.
F—Displays lighting fixtures.

Other activities which will be taken up by the new department are as follows:

1. Collecting, analyzing and listing the successful activities of local associations, and publication of a complete hand book with constructive programs for several years' work.
2. Systematic correspondence with local and state association officers to keep closer contact with their work and our members' interests.
3. Promote and direct Divisional meetings in all Divisions.
4. Study of the development of the contracting business with special attention to costs and overhead.
5. Study of the developments of merchandising, with special attention to practical systems for servicing electrical devices.
6. Education of both contractors and dealers to prepare systematic plans and budgets for developing their business.
7. Study of the residence wiring problems with efforts to direct it into improved channels; and to work out plans for successful residence wiring campaigns in cooperation with the central stations.

It was recommended by the committee that these activities be taken up as soon as the finances of the Association would permit and that the field men be instructed immediately to collect such information as would help towards carrying out this work.

Executive Committee Meets

It is expected that the coming semi-annual meeting of the Association of Electragists' Executive Committee will undertake work of far reaching importance to the electrical industry. Two day sessions on March 14 and 15 will be held at the Building Trades Club, 34 West 33d Street, New York City—not at Association Headquarters as in the past.

Coming as it does immediately following the public hearing on the National Electrical Code in New York City on March 12, thoses who are present at this hearing may easily arrange to attend the Executive Committee meeting.

In accord with the new constitution and bylaws of the A. E. I. the committee will be represented by eleven members instead of nineteen as formerly, and this should make for more expeditious handling of all matters. The meeting is open to all electragists and to the public as well.

Wisconsin Meeting

The annual convention of the Wisconsin State Association of Electragists was held at the Hotel Pfister, Milwaukee, on January 24-25-26. An interesting program was provided with entertainment features for the ladies as well as for the male attendants.

F. A. Coffin, general sales manager of the Milwaukee Electric Railway and Light Company, spoke on the subject, "Problems of Mutual Interest to Central Stations and Contractor-Dealers." K. A. McIntyre, special representative of the Society for Electrical Development, took as his subject on which to talk, "Business Development."

John A. Clark, of the Westinghouse Company, presented a paper on "Small Motors as a Merchandising Possibility for the Electragist," while the two well known characters Harry Kirkland and Dick Turpin spoke on other topics relating to the carrying on of successful business in the electrical industry.

P. F. Parker, president of the Radio Corporation of America, gave a talk on the "Merchandising of Radio." Laurence W. Davis, as manager of the newly formed Department of Promotion and Development of the Association of Electragists, set forth "Some Remedies for the Present Ills in the Electragist Business."

In addition to these speeches Dr. W. T. Dorward, a well known lecturer in the middle west, presented an address, "The Master Key." The fact that Dr. Dorward is a Scotchman is sufficient explanation of the ever present humor he displayed in his talk and which was worth the time and expense of going miles to hear.

On the opening night a theater party was given the ladies and gentlemen. The second afternoon, after having lunch at the Milwaukee Athletic Club as guests of the Association, the ladies were taken to a matinee, and at night the big banquet and dance took place for all in the Fern Room of the headquarters hotel.

During the business sessions the two important topics to be discussed were the revision of the Association's constitution and bylaws and the proposed new state licensing law.

A. E. I. Committee Nominees

Following nominations have been made for committee chairmanships of the Executive Committee, Association of Electragists, subject to approval at the meeting on March 14 and 15:

Architects, Clyde L. Chamblin, 687 Mission St., San Francisco, Calif.; Code, A. Penn Denton, 17th and Oak Sts., Kansas City, Mo.; Conventions and Meetings, James R. Strong, 526 West 34th St., New York City; Cost Data, Arthur L. Abbott, 182 East 6th St., St. Paul, Minn.; Credit and Accounting, Arthur L. Abbott, 182 East 6th St., St. Paul, Minn.; Electragists' Data Book, Jos. A. Fowler, 10 S. 2nd St., Memphis, Tenn.; Engineers, C. C. Carter, 739 Hastings St. W., Vancouver, B. C.; Legislation, E. C. Headrick, 89 Broadway, Denver, Colo.; Liability Insurance, Jos. A. Fowler, 10 S. 2nd St., Memphis, Tenn.; Membership, James R. Strong, 526 West 34th Street, New York City; Publication, R. A. L. Gray, 85 York St., Toronto, Ont.; Standardization, L. G. Ross, 1305 Tower Ave., Superior, Wis.; Trade Policy, W. Creighton Peet, 70 East 35th St., New York City, and U. S. Chamber of Commerce, L. K. Comstock, 21 East 40th St., New York City.

The list of these committees showing the name and address of the respective chairmen will be printed each month on a separate page for that purpose. It is urged that this committee work be kept constantly in mind and the chairman advised of any development rightly coming up for his attention.

Get What's Due You

The Manual of Estimating is a necessary adjunct to every contractor-dealer business. Like a desk or a bureau in the home it is indispensable when once installed.

It is copyrighted and published by the Association of Electragists, and since it is released only to members in good standing of that body it behooves every nonelectragist to join the Association and those that are in arrears in dues to pay up promptly and get what's due you.

Electrical Conference

An electrical conference was held in the Musical Fund Hall, Philadelphia, on Thursday night, January 18. Matters of daily importance were taken up in order to promote more and better business in all branches of the electrical business.

Charles J. Russell, vice president and general commercial manager of the Philadelphia Electric Company addressed the meeting on the subject, "The Wireman and His Central Station." He used lantern slides and moving pictures to illustrate the important points of the discussion. Joseph G. Crosby, of the Whalen-Crosby Electric Company, Philadelphia, outlined how to conduct an electrical contracting business successfully.

S. E. D. Expresses Goodwill

A message of goodwill was received from the Society for Electrical Development in behalf of the coöperation rendered it by the electrical trade press. The message bore the signature of the newly appointed secretary, J. Smieton, Jr., who advised that such expression had been voted by the board of directors after the reading of the assistant to the president's semi-annual report in which the matter was called attention to.

Talk Up a New Field

By G. L. Beaver

How the Electragist Can Aid His Own Business—Opinion of G. E. Expert

Someone has made the statement that the electragist is the doctor of electricity for his community; and while it may not be that the average contractor-dealer has his name followed by the remainder of the alphabet in capital letters inscribed on a shingle suspended above his store entrance, it is nevertheless true that the average citizens of our smaller towns look to their electragist for counsel and guidance in matters electrical.

The members of the medical profession are not only interested in making repairs to our human mechanisms when required, but are also much more concerned in the advancement of public sanitation and other measures for the improvement and safeguarding of the public health. The doctor of electricity is not fulfilling his entire responsibility to his community if he is content only with the repair of burntout appliances.

The electrical doctor of established standing in the community should also be interested in safeguarding the public interest by striving to put to work in his town as many as possible of the best and most modern electrical servants in order that his townspeople may realize the maximum of health, safety, and comfort.

Aside from the use of household appliances in their individual homes there is probably no one electrical matter which is of more general interest to the citizens of the smaller town than the proper lighting of the streets. The benefits of properly illuminated streets accrue to all residents alike, and it is from the pockets of these residents that the money for the installation and operation of their street lighting equipment must come. Good street lighting is therefore one matter of general interest that the local electrical doctor can talk up to his fellow townsmen.

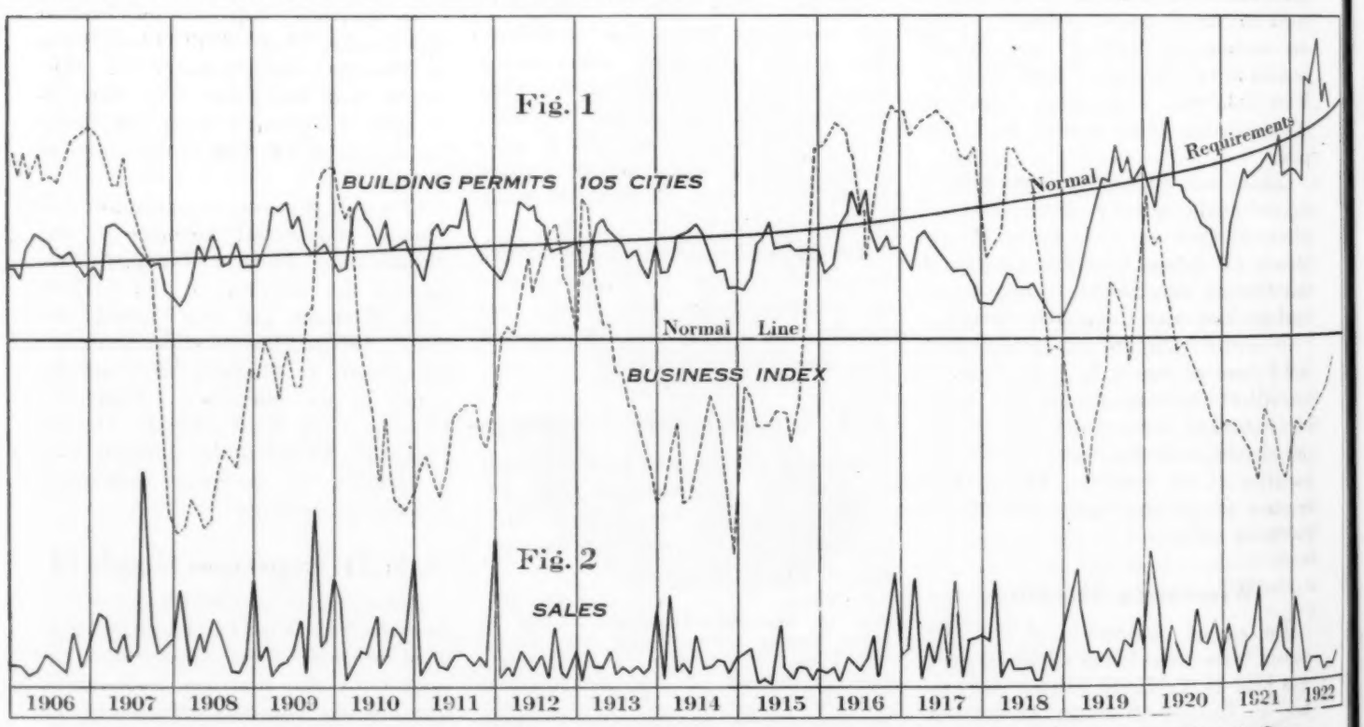
Two instances have recently come to my attention where electrolier systems are being installed, or are to be installed, in small towns, due largely to the efforts of the local electrical docs in doing the early promotion and missionary work. Paul Keller, dealer in Concord, Contra Costa Company, California, a town of approximately 2,000 inhabitants, talked it up with the result that his town is just completing an extensive electrolier system.

Mr. Keller was a member of the town board of trustees and helped to sell the idea to his fellow members. When the proper time came he enlisted the services of specialists, representatives of the jobbers and the electrical manufacturers, and the rest was easy. His last report states that people living on the side streets, not included in the original layout, are now clamoring for those new street lights.

In Hayward, Alameda County, California, a community of approximately 3,500, Jack Vieux, local electrical doctor, talked it up for over a year. He assisted in the organization of a local Boosters Club, arranged for talks on street lighting by the jobber's representatives, and got the Chamber of Commerce interested. The result was that when the matter came before the town board of trustees the town was sold on the idea of an electrolier system, and it only remained for the city engineer to select the equipment best suited to its needs.

What direct benefits can the electragist expect from street lighting improvements?

First, the possibility, if he is interested, in securing a good installation contract and perhaps a new lamp contract in connection with the new electrolier system. Second, and perhaps of more importance, experience indicates that increasing the intensity of il-



Showing building permits by months for 105 cities from 1906 to close of 1922, as charted by the Frank Adam Electric Company of St. Louis. The solid line represents estimated normal requirements for each year. Building construction for the years 1906-7-8 was close to normal, and above normal for 1909-10-11-12. Since 1904 building construction has been so far below normal that there is now an estimated shortage of 2¼ years of normal construction. The dotted line is an index of general business conditions, fluctuating above and below normal, and represents the business cycle. The downward trend in building construction precedes the downward trend of general business, and the revival of the construction industry likewise precedes the revival of general business.

lumination on the streets causes an immediate demand for better store and window lighting and more and better electrical display signs, all of which mean lamp business and wiring contracts.

Therefore for the advancement of the electrical art, the welfare of their town and their own business—for one reason or for all, as you please—other local doctors of electricity may do well to follow the example set by "Doctor" Keller of Concord and "Doctor" Vieux of Hayward in talking up a matter which offhand might not seem to be within the province of an electragist—the proper lighting of the town streets.

Optimistic Notes

Joyous optimism is being noted in many quarters with reference to 1923 business. Howard Foley, down Washington way, states that from present indications this will be the best year his company has ever had. H. L. Walker of Raleigh, N. C., another electragist, writes that contracts are being signed by his concern these days faster than Childs restaurant in New York can flip pancakes. He is completely equipping electrically several high and public school buildings in his city.

Unprecedented volume of electric cleaner business is reported by The P. A. Geier Company, Cleveland, for the closing months of 1922 and the beginning of the new year. "Not even in the times of greatest prosperity have we experienced such heavy buying," states F. J. Gottron, general manager of the company.

Reviews Engineering Feats

The past year has witnessed the same remarkable contributions to the world in engineering from the engineering headquarters of the Westinghouse Electric & Manufacturing Company in East Pittsburgh which have characterized the activities of its engineers in the decades which have gone before, according to H. W. Cope, assistant director of engineering, in an annual review of the company's engineering achievements.

The electrical art is subject to constant change and improvement, notwithstanding the great strides which have been taken in the past. New fields of investigation and development, such as those typified by the introduction of radio engineering, are being evolved for carrying on those things which have been produced heretofore.

The year 1922 witnessed many things which will add to the comfort of mankind and make the world a better one in which to live. In some instances, this has been accomplished by the introduction of new devices and knowledge, while in others, the benefits will come indirectly through improved economical conditions. For instance through the introduction of more efficient machinery which will conserve the nation's natural resources.

Improved Wiring Results

Field Representative of Denver League Makes First Report

An analysis of the field activities of the Denver Electric League's outside representative, Frank J. McEniry, since his appointment last November discloses many noteworthy points of interest to every member of the electrical industry in that city.

Within almost a month's time the field representative contacted the builders of approximately 55 homes in north, east, and south Denver. In some few instances he dealt with builders of individual homes, but more frequently conferred with contractors, builders, and real estate dealers each of whom plan constructing as many as three to eight homes in the next few months.

Briefly, he talked electricity and convenience outlets to 13 builders who now are constructing 34 homes, averaging five rooms each. Although it would be impossible to cite exact figures at this time showing what gains have been made in the installation of additional outlets and improved wiring in these homes, it is estimated these builders will provide from four to five additional convenience outlets in each new home. Before they were approached they most likely would have limited their wiring jobs to an average of one or two outlets in each new home.

In addition to the 13 builders of 34 homes, Representative McEniry interviewed 14 builders who virtually have completed the construction of 21 homes in all parts of Denver. These latter homes will be ready for occupancy soon. Provision was made in most of these homes for one and two convenience outlets.

Of these 14 builders of 21 completed homes, approximately 10 are planning construction of more dwellings and have promised to provide convenience outlets for the most part, in kitchens, dining and living rooms, and in numerous cases, halls and bedrooms.

Generally speaking home builders in Denver are receptive to house wiring arguments. It goes to prove they generally will entertain any suggestions which will boost values of their homes and enable them to more readily find a purchaser. They are commencing to realize that electricity is just as essential in modern homes as plumbing, heating, ventilation, etc.

One argument which seems to win the greatest favor is that every dollar spent in the electrical equipment of a home adds $4.00 to its value. Investment

Here Were Some of the Exhibits Shown at the Recent Electric Show in Columbus, O., Attended by 10,000 People

builders of homes are on their toes to add the latest touch of modernism if the cost is not prohibitive.

Past experience has shown that many investment and individual home builders are inclined to cut the corners on most house wiring jobs if possible to save money for other and frequently less important essentials.

On the other hand some builders are readily receptive to any suggestions looking to more adequate house wiring but an alarming number are adverse to anything which tends to encourage increased use of electricity. In contacting this latter group of builders it first becomes necessary to break down any resistance which may manifest itself and then win the absolute confidence and goodwill of the person concerned before boosting convenience outlets, better and more wiring, improved illumination, and otherwise obtain definite gains for the electrical industry generally.

Once the interest of the individual concerned has been developed it then remains for the electrical contractor to follow up closely the results obtained by the field representative. By so doing he cashes in on the special market which has been developed through coöperative effort.

Extensive building operations of 1922 will continue in 1923. The volume of work will warrant adequate profits provided the contractor sells a quality job and does the work for a legitimate price. Volume of work means little when there are no net profits. One job properly figured to carry a profitable margin is better than a score of jobs coming from cheap competition. Salesmanship will sell and it will be found much easier to do better, more complete, and higher quality jobs if the proper follow up will be maintained after the League has done its missionary work.

Electragist for Trophy

Many other qualifications beside being the silver tongued orator of the south are noted in the life of one Joseph A. Fowler of Memphis, Tennessee. They're too numerous to mention here, but the fact that he has been picked as the likely candidate to receive a distinguished civic trophy evidences in public matters the value of his personal acquirements.

Under the heading of Nominees at various intervals the Memphis News Scimitar prepares and prints a writeup of certain individuals as candidates for the civic trophy being offered by that newspaper to the person deemed most prominent in the advancement of the city's interests. Between twenty-five and fifty names will have been presented when the prize is awarded by a committee of civic club presidents, it is reported.

Who is Joseph A. Fowler? Why, why, think a minute. Of course he's the man that represents the Southern Division on the Executive Committee of the A. E. I. So all together now, everybody, three cheers for him! And we hope he gets the trophy.

Society Field Work

Kenneth A. McIntyre of the staff of The Society for Electrical Development, started early in January on an extensive trip to visit about seventeen different cities throughout the United States and Canada. Mr. McIntyre will visit these communities with the specific object of carrying out the Society's obligations to the industry as implied by the Robertson resolution adopted at the conference of local electrical cooperative organizations at Association Island last September.

His services will be available to local electrical leagues and clubs for meetings with the executives or governing committees, for the purpose of discussing the best methods of effectively carrying on local coöperative work through the interchange of experiences of the various leagues throughout the country.

He will also address the industry where meetings are arranged for the purpose of stimulating interest in local work and offering firsthand information of activities in other communities.

It is also Mr. McIntyre's purpose to call on Society members and acquire information regarding their problems and suggestions as to ways and means by which the Society can increase the value of its activities.

Local newspapers will be visited wherever possible and the operation of the Society's weekly news and educational copy service explained and efforts made to interest editors in the use of this material.

It is the desire of the directors of the Society that its services shall be made of greatest possible value to the industry as a whole. and to this end in all of its field work the plans of the Joint Committee for Business Development will be explained, together with the part the Society is filling in this program.

It is hoped that this work of the Society will aid materially in broadcasting the message to the industry to Electrify, and thereby add to the effectiveness with which the public is being taught to Do It Electrically.

Goodwill Advertising

In a series of advertisements in the Moline Daily Dispatch, the Tri-City Electric Company of Moline, Illinois, ran one advertisement, two columns in width by 11 inches in length setting for the electragist and emphasizing the value of goodwill. A paragraph on Reputation, written by W. J. Ball, manager of the company, reads as follows:

The man who builds and the man who buys are both beneficiaries of a good reputation. To the one it is a continuous spur and an incentive—to the other the strongest of all guarantees that what he buys is worthy.

We sometimes speak of winning a reputation as though that were the final goal. The truth is contrary to this. Reputation is a reward, to be sure, but it is really the beginning not the end of endeavor. It should not be the signal for a let down, but rather a reminder that the standards which won recognition can never again be lowered. From him who gives much—much is forever after expected.

Hold Series of Exhibits

The recently organized bureau of exhibitions of The New York Edison Company under the auspices of which all future specialized exhibits by the company are to be held has announced a schedule of seven shows to be held for several months ending in June. These seven shows will cover electric signs, electric heating, household equipment, electro therapeutics, ventilation and refrigeration, and electric trucks.

All the displays will be in the showroom of the company in New York City and will be free to the public. As with previous shows of this sort, the exhibits are by invitation and there are no sale of space to exhibitors The electric sign is the first of the series. It is being held during the week of January 29-February 3. The other shows scheduled are as follows:

Heating—Feb. 19 to 24.

Washing Machines, Ironing Machines and Dishwashers—Mar. 12 to 17.

Power, Ventilation and Refrigeration—April 2 to 7.

Electro Therapeutics—April 23 to 28.

Vacuum Cleaners and Floor Machines—May 14 to 19.

Electric Trucks, Cars and Accessories—June 4 to 9.

Coming Conventions

A catalog of convention dates for the months of February and March is as follows:

February

12-13—New Mexico Electrical Association, Albuquerque, New Mexico. Charles E. Twogood, Sec'y., Albuquerque, New Mexico.

13-14—Electrical Supply Jobbers' Association (Central Division), Chicago, Ill. Franklin Overbagh, Gen. Sec'y, 411 South Clinton St., Chicago, Ill.

14—Electrical Supply Jobbers' Association (Atlantic Division), New York, N. Y. E. Donald Tolles, Sec'y, 165 Broadway, New York, N. Y.

14-16—American Institute of Electrical Engineers (Mid-Winter Convention), New York, N. Y. F. L. Hutchinson, Sec'y, 29 West 39th St., New York.

16-24—Home Builders' Exposition, Oklahoma City, Okla. H. G. Eastban, Sec'y, Liberty National Bank Bldg., Oklahoma City, Okla.

17-22—Universal Exposition of Inventions and Patents, Grand Central Palace, New York, N. Y. (Auspices: Universal Patent Exposition Corp.) A. B. Gale, Vice-Pres., 110 West 40th St., New York, N. Y.

March

12-13-14—Oklahoma Utilities Association, Oklahoma City, Okla (Fifth Annual Convention). (To be held in conjunction with Southwestern Division of N. E. L. A.); O. D. Hall, Sec'y, 1106 First National Bank Bldg., Oklahoma City, Okla.

14-15-16—Southwestern Div. N. E. L. A., Oklahoma City, Oklahoma. (In conjunction with Oklahoma Utilities Association.) S. J. Ballinger, Sec'y, San Antonio Pub. Service Co., San Antonio, Texas.

16-17—Illinois State Electric Association, Chicago, Ill. R. V. Prather, Sec'y, 305 Mine Workers' Bldg., Springfield. Ill.

19-24—The Home Beautiful Exposition, Scranton, Pa. H. A. Dickworth, Sec'y, Corn Exchange Bldg., Scranton, Pa.

22-23—Wisconsin Utilities Association, Milwaukee, Wis. Headquarters, Hotel Pfister, J. N. Cadby, Sec'y, 445 Washington Building, Madison, Wis.

24-31—Own Your Home Exposition, Chicago, Ill. Manager, 111 West Jackson Boulevard, Chicago, Ill.

New League Plans

Cleveland Group Recommends Four Divisions of Industry

After having successfully conducted a special educational and commercial program for the past two years, it is the unanimous opinion of not only the officers and directors but of every active member of the Cleveland Electrical League that the development work should continue throughout the year of 1923.

It is the opinion that even more effective work can be done by dividing the industry into the four natural groups or sections as follows:

The Wiring Section—To include all who have to do with the production, installation or distribution of any of the material, equipment or devices used in connection with wiring installations.

The Lighting Section—To include all who have to do with the production, installation or distribution of lighting equipment.

The Appliance Section—To include all who have to do with the production or distribution of appliances.

The Industrial Power and Heating Section—To include all who have to do with the production or distribution of power and electrical heating equipment.

Under this arrangement it is the plan to provide a special program for each section, so that each subscriber or member can, depending upon the nature of his business, contribute toward the part of the league's program which will be most beneficial to the member.

It is reported that Cleveland had 65 electric homes exhibited in 1922. The three homes in 1921 were operated at a cost of approximately $15,000. On the fourth home the builder paid 25 percent of the expense and on the fifth home the builder paid all of the expense. In addition to the fourth and fifth homes, which were operated by the league, there were two homes exhibited by individual builders in coöperation with two contractor-dealers.

In addition one builder exhibited forty-three electric homes and another builder exhibited eighteen electric homes. All of these homes, the forty-three and eighteen, had wiring and lighting installed according to recommendations from the league. In each case only one of the houses was furnished and equipped with electrical appliances but all were advertised as electrical homes and were exhibited to the public.

During the past year the league made recommendations for wiring on 300 sets of home plans—recommendations called for an average increase of 23 outlets per house. A check on some of these houses shows an increase of 50 percent over the number of outlets that had been recommended by the architect before plans were brought to the league. In the case of the forty-three houses, the builder was persuaded to install 17 additional outlets in each house, making a total of 731 additional outlets which were sold with but little effort.

A survey in 1921, showed that 13,550 Cleveland homes had an average of 3½ convenience outlets per home. A recent check on more than a hundred homes in various parts of the city shows an average for houses with from five to eleven rooms, of 10.2 convenience outlets per home.

One builder who built 360 houses in 1922 increased the convenience outlets from 3 to 10, or a total increase of 2,520 outlets. Without considering additional switch and lighting outlets, it is reasonable to assume that the average increase in new houses has been at least seven outlets per house; then for a total of 6,000 new homes built in Cleveland in 1922, the increase in outlets would be 42,000.

In connection with the 1922 plans to "Make every new house an Electric Home," a special twelve page booklet was prepared and 4,000 copies have been distributed to architects, building contractors, wiring contractors and to each person who takes out a permit to erect a dwelling building.

That Window Trim Service

How Chicago Edison Company Carries it on for Dealers' Benefit—Progress Noted

Apparent progress is noted in the plan and development of the window trim service offered by the Commonwealth Edison Company of Chicago to electrical dealers in its territory.

During the last six months weekly dinner meetings were held at which it was endeavored to present instructive and practical ideas of salesmanship and retail merchandising. The company hopes to be able to hold such meetings throughout this year about twice a month. Practical demonstrations of display methods are made at these meetings. One plan devised is the construction of a full sized window with which merchandise is displayed to show examples of bad as well as good methods.

An arrangement has been made whereby dealers can secure trading stamps under the same coupon plan as used by the Commonwealth Edison Company. These stamps are given out by merchants and have a tendency to increase the attendance in stores.

The dealer can redeem the stamps and coupons under the same conditions as obtain in the practice of the Edison Electric Shop. These coupons cost him 2 percent of the gross value of the merchandise on which he gives out coupons. The coupons which the dealer redeems are picked up by the Edison company and turned in to the Profit Sharing company and credits for merchandise are issued to the dealer at a rate of $1 for each 1,000 coupons. These credits are the same as cash on the purchase by them of appliances from the Profit Sharing Company.

If any dealer desires to sell the same washing machines and vacuum cleaners as are handled by the Edison company he may do so under a time payment plan. The Edison company will col-

lect all deferred payments on the customers' monthly lighting bills. The Edison company also spread on its lighting bills the time payments of other appliances but it does not assume responsibility for the final collection of these accounts. In a delinquent case the dealer is notified and must take some steps to see that the bill is paid. In this connection the names of dealers handling this class of merchandise are featured in the advertising matter in the daily newspapers covering washing machines, vacuum cleaners, and special campaign articles handled by them.

Dealers collect electric light and power bills at their stores. This arrangement is made through the medium of the local electrical contractor-dealers' association, the association arranging for the necessary bonding of the dealers.

The Coupon Profit Sharing Company furnishes a salesman trained in the coupon plan and experienced in retail merchandising that visits their places of business regularly and assists the dealers in every way to improve their merchandise displays and sales. Some of the service rendered is furnishing hand lettered display cards, paper and cloth banners, price tags, etc. The dealers are assisted in canvassing their particular neighborhood for the sale of merchandise and also have a window trimmer visit them when requested. If they use newspaper advertising they are helped in preparing copy and are assisted in addressing the envelopes for the delivery of advertising matter to local users of electricity.

This program of window trim and other service is given in order to help the dealers place their business on a better business basis. In time it is felt that this service will not be needed, when the dealers have sufficient knowledge of the work.

New York Luncheon

An enjoyable luncheon meeting was held in New York City on Wednesday, January 10, at the Engineers Club in honor of J. S. Tritle, the new merchandising manager of the Westinghouse Company.

Samuel Adams Chase was master of ceremonies, and what a master he proved to be. The menu was delightful —ah, indeed, most delightful. The beloved Sam promised each guest he would not be called upon to speak as the purpose of the meeting was not to listen to formal speeches but just a little party for Mr. Tritle's sake. After adjournment, however, it was found that this part of the program had not been followed to the letter. But everybody had a good time anyway; what else mattered?

S. E. D. Adds to Staff

In order to encompass the far reaching program laid out for the year by its directors, The Society for Electrical Development has made several additions to its staff.

Albert Kapteyn, a man of wide education and experience along engineering and other lines, joined the Society at the close of 1922. His work with the Westinghouse Machine and Air-Brake Companies, supplemented by considerable experience in export work, especially fits him for the making of original studies and the preparation of booklets for the Society.

W. W. Ayre brings to the Society knowledge gained from an extensive advertising and publicity training. He has successively and successfully filled positions with the McGraw-Hill Company, the advertising department of the Western Electric Company; Tucker Advertising Agency, in the copy and production department, and was more recently managing editor of the Pulishers' Autocaster Service in New York. His work with the Society will be on the preparation of advertising and merchandising suggestions, and the writing of booklets and monographs on electrical subjects.

To assist in organizing and fostering home economics work, the Society sought the services of Mrs. Harriett C. Emmons. She is a graduate of Pratt Institute, household science department; member of the American H. E. Association; former director of the Home Economics School at Chautauqua; late field editor of Modern Priscilla; member of many women's business clubs. With a general business experiencing extending over many years, Mrs. Emmons seems eminently fitted for the work for which she has been engaged.

As a much needed link man to contact with newspaper editors and managers, to assist them and the industry in seeing that the public receives authentic information about things electrical, the Society's choice fell upon W. S. Sands. From his previous experience in the advertising and publicity fields, making commercial surveys for leading agencies, as editor of a market condition summary, and manager of the merchandising service department of The Springfield Union, Mr. Sands should be invaluable and the industry may expect its message to be more effectively broadcasted with beneficial results to all.

On Selling the Architect

A True Instance When an Unusual Argument Persuaded Him

An interesting conversation took place in the office of a leading Cincinnati architect who could not quite see any necessity of being particularly interested in luminous equipped switches and sockets, etc. He admitted the usefulness of luminous material but possibly because he had so many new things put up for his attention, used the time honored argument, "Well, I haven't seen them used in very many places so far."

Just at this time the telephone rang and he was called away a moment and the salesman had to wait until he was through before he could answer the argument. While waiting, his gaze fell upon a framed picture of a rather large hotel standing on what was intended to represent the busiest corner of the city. After the usual manner of such drawings, the foreground was represented as consisting of two intersecting broad avenues filled with vehicles and apparently no other buildings within a thousand miles.

Directly in front of the main entrance were two beautifully equipped Victorias each drawn by a pair of prancing horses and driven by a highly upholstered coachman accompanied by a similarly attired footman. On both avenues several more of these now antique vehicles appeared, as well as three or four horse drawn commercial vehicles. Street cars appeared on the avenue in such a way as to show only the rear platform but they looked suspiciously like horse cars. Across the street was one lone electric roadster, with its single seat, its curved dashboard and its nickel plated steering handle.

The architect finished with the telephone and the salesman remarked, "That's a very nice picture and not so old either. I notice your signature on it and the date 1903. I also notice that out of a dozen or more vehicles only one is an automobile."

The salesman then started to point out the various items enumerated above but he didn't get very far. The architect was a man appreciative of modern improvements. The idea appealed to him instantly. He also visualized that same corner with a modern setting and

thought back just as the salesman had to the probable feeling of an individual in 1903 who was told that in a few brief years automobiles would not only be common but that horses would be nearly obsolete.

"I think you're right," said the architect, "and I am going to add luminous material to my standard specifications for electrical devices."

This is a true story. What do you think of it? Electragists have similar opportunities presented constantly whereby they may make worthwhile sales if they keep a sharp lookout for the other fellow's weak points and take advantage of them.

New Use for Appliances

So far as is known, the manufacturers of electric percolators have produced and distributed their product for the good and sufficient purpose of filtering aqua pura through the crushed coffee bean. The result produced is a stimulating cup of clear coffee. What more could anybody want?

The customer of a modern electrical store in the roaring forties of New York City wanted more, and he got what he wanted. He purchased the latest creation in electric coffee percolators—not to brew coffee, but to humefy his apartment. He claims that the modern dry heated apartment requires more humidity than can be supplied by a pan of water on the radiator. So he fills his percolator with water, connects the attachment to the convenience outlet, and is supplied with the desired degree of humidity, day or night, as he wants it. Count another useful service for the electric coffee percolator.

The hair dryer, because it has a hundred uses other than just that of fluffing milady's locks, has been graduated into a wider sphere of service by The P. A. Geier Company. Its new model machine called the Royal Electric Dryer is to be sold as a general utility for household and shop.

"Housewives and other users of the dryer have found it so handy for many different purposes that we no longer feel justified in offering it merely as a hair dryer," said J. L. Mahon, merchandising manager. "The photographer uses it to dry his plates, the mother turns to it to dry the children's muddy shoes, or to remove the least suggestion of dampness from a freshly ironed frock which the little tot must don at once.

Was the hair tonic spilled on the dresser scarf, or the jam pot upset at breakfast? A damp cloth and the warm breeze from the dryer will save the labor of laundering the stained linen. The same blast of air removes the moth ball taint from garments which have been packed away, and banishes any suggestion of gasoline odor from the suit or dress from which a spot has been removed.

Decreasing Servants

The decrease in the number of domestic servants, as shown by the last census is not due to the shortage of persons willing to accept this sort of employment, according to Edward N. Hurley, Jr., vice-president of the Hurley Machine Company of Chicago.

"While the census shows that there has been a decrease in the number of persons listing themselves in the domestic service classification," said Mr. Hurley, "a recent survey of the field force of our company shows that more women than ever before are doing their own household work by preference. This is largely due to the increased use of electrical conveniences." He continued:

There are now approximately 2,500,000 washing machines of all makes and types in use in the United States. While the washing machine has been on the market for many years, the full appreciation of this labor saving device did not reach its climax until the period of the war, when thousands of women left domestic employment to go into munition factories.

Back in 1909, there were only about 3,000 electrical washing machines in the United States. Today the Hurley Machine Company alone is manufacturing 12,000 a month. The future possibilities of the industry are shown by the fact that there will be at the end of this year 9,500,000 wired homes in the United States.

News Notes Concerning Electrical Contractor-Dealers

Business Changes, Store Improvements, and New Establishments Opened

Paul H. Jaehnig, Incorporated, an electrical supply and contracting business located at 109 Bank Street, Newark, New Jersey, will move to 283 Plane Street, where an enlarged merchandising department will be established.

R. E. Rounsaville & Company are making extensive improvements to their electrical supply and fixture store at Tulare, California. Floor space will be enlarged and mezzanine floor will be erected.

Fred Kastel, Belleville, Illinois, will erect a building at Main and Second Streets and will occupy as soon as completed. A full line of electrical supplies will be carried.

Frank Voelker Electric Company, an old established electrical supply business, has established headquarters at 3610 North Fourteenth St., St. Louis, Missouri. Incorporated capital, $10,000.

Premier Service Corporation is open for business at 114 East Third Street, Jamestown, New York, where a complete line of electrical appliances will be handled.

Alexander Radio Company will locate at 1003 Pine St., St. Louis, Missouri. An extensive line of electrical and radio supplies will be handled. Incorporated capital, $10,000. Would like good connections with radio firms and jobbers.

R. E. Sanders has opened a new electrical supply and appliance store at Madison and Washington Streets, Camden, Arkansas.

Gratiot Electric Company is opening an electrical supply store at 9206 Gratiot Avenue, Detroit, Michigan.

Electric Household Shops, Incorporated, will feature electrical appliances at new store of which Edward Karl, 4806 Pabst Street, Milwaukee, Wisconsin, and others are incorporators. Incorporated capital, $10,000.

Robertson-Cataract Corporation, in the electrical supply business at Buffalo, New York, has bought out the Mohawk Electrical Supply Company at 348 West Fayette Street, Syracuse, New York, and will continue to do business in that city.

Martin Stelling, Jr., has established headquarters at 548 Jones St., San Francisco, California, where he will conduct an electrical supply and contracting business. Estimated worth of concern, $10,000.

Murray-Lash Electric Company is opening a branch store at 124 East Long Street, Columbus, Ohio. A full line of electrical appliances will be carried.

R. H. Moran & Company are opening an electrical supply business at Madisonville, Kentucky. Incorporated capital, $15,000.

Schlueter Commercial Company will feature electrical appliances in new store located at Eighth and Market Streets, San Francisco, California.

Cook & Foster will open an electrical supply business at Astoria, Oregon. Estimated worth of concern, $15,000.

Home-O-Lite Company of which C. G. Ognibene, 299 Broadway, New York City, and others are incorporators, will feature a complete line of electrical fixtures.

Harbor Electric Company, Harbor Beach, Michigan, is increasing capital stock from $10,000 to $20,000.

The Torrington Shop has established headquarters at 304 West Fourth Street, Joplin, Missouri.

Mundell & Fulmer Electric Company, 228 Fourth Street, Santa Rosa, California, will move to 416 Fourth Street, where a complete line of electrical supplies will be carried.

E. R. Wright has opened an electrical supply store at 222 South Main Street, Memphis, Tennessee.

Schott Radio & Electric Company of which Wm. P. Schott and F. H. Schott are proprietors, will locate at Emington, Illinois, where an extensive line of electrical supplies will be handled.

Lloyd Conklin is featuring electrical supplies in new store at 107 South Division Street, Peekskill, New York.

Henry Kropp has moved to 3317 Irving Park Boulevard, Chicago, Illinois, where he will conduct an electrical supply business.

Peoples Electric Supply Company of which L. B. Garver is proprietor, has established headquarters at Grinnell, Iowa.

Van Nuys Electric Company has opened a new electrical supply store at Van Nuys, California. Proprietors: R. J. Brown and H. A. Bell.

Thor Electric Shop of which P. O. Perry is proprietor, will locate at 113 Main Street, Salt Lake City, Utah. Formerly at 157 Regent Street.

Pacific Appliance Company is establishing headquarters at Eighth and Markets Streets, San Francisco, California. Estimated worth of concern, $25,000.

Lang Electrical Company will continue to conduct electrical supply business at 1647 South Thirty-ninth Street, St. Louis.

Holt's Electrical Company will occupy new quarters at Gaynor Block, Berlin, New Hampshire.

Forbes Supply Company of which Louis R. Lurie is proprietor, is erecting store building at northwest corner Fifth and Clementine Streets, San Francisco, California, where an electrical supply and contracting business will be conducted.

Cresson Electrical Supply Company is conducting an electrical appliance business at Keystone Avenue, Cresson, Pennsylvania.

Royal Fixture Corporation, Milwaukee, Wisconsin, will feature an extensive line of electrical supplies. Incorporators: D. Lappin, 124 West Water Street, and others. Incorporated capital, $50,000.

H. J. Stone & Company will move to new quarters at 142 Bank Street, Norfolk, Virginia, where an electrical supply and contracting business will be conducted. They will also enlarge stock generally.

Tilton & Dietrich have opened an electrical appliance and supply store at 622 South Salina Street, Syracuse, New York.

Home Radio Company of which Wm. Feigenbaum, 1937 North 33rd Street, Philadelphia, Pennsylvania, and others are incorporators, will feature radio and electrical supplies. Incorporated capital, $10,000.

James McGabe will locate at 1012 East Genesee Street, Auburn, New York. Present location is 132 Genesee Street, where Mr. McGabe conducts an electrical supply business.

Acme Electric Shop has established headquarters at 109 South Third Street, Niles, Michigan. Proprietors: W. F. Forbes and Chas. D. Hills.

Oil Cities Electric Company has opened a new electrical appliance store at Breckenridge, Texas.

Premier Service Company is opening an electrical supply store at 94 North Forsythe Street, Atlanta, Georgia.

J. D. Near will enlarge electrical appliance business at 810 South Third Street, Clinton, Iowa.

Cumming & Barker will open an electrical contracting and supply business at the Estabrooke Building, Water Street, Houlton, Maine.

United Electric Stores Corporation is open for business at New Market Street, New Jersey. Incorporators: S. Eisemann and others. Incorporated capital, $100,000.

Electric Supply Company, 16 South Lauderdale Street, Memphis, Tennessee, is increasing capital stock from $100,000 to $250,000.

Leases New Building

The Westinghouse Electric & Manufacturing Company has leased a six story building to be erected in Atlanta, Ga., at a cost of $360,000. The building will be constructed according to the company's specifications and will be used as an office, warehouse and service station.

If Utilities Stop

The Indiana Public Service Commission tells us that in time of adversity or hard times the private business ceases to borrow money, immediately cuts down expenses by discharging men, by cutting wages, by refusing to buy unless the price is satisfactory, and if necessary it reduces its output or closes up shop or waits for more prosperous times.

The public utility can do none of these things. It must continue to operate at full blast regardless of the nature of the times. It must continue to borrow money at excessive rates. It must continue to buy the materials and supplies required. It must retain its full force of employes and increase the force as the demands for its service increase. It cannot reduce salaries and wages to the same extent as private business, for its salaries and wages were never increased to anything like the heights of private business.

If trained employes were discharged, if inexperienced, cheap labor were employed, if the necessary material and supplies were not on hand, if money were not borrowed to make required additions and extensions, the service immediately would suffer and the patrons would be the first bitterly to complain.

A Wise Investor

There is an old couple who live in central Illinois. They had some money for investment and the husband bought foreign bonds and mining stock, while the wife bought stock in the local electric light and power company. When their banker brought up the question as to why she bought utility stock she replied:

"Well, I don't know much about mines or foreign countries, but I can see the sun go down across the prairie here in Illinois every night. If I get worried about my investment, all I have to do is to turn a switch, see the light and then I know my investment is safe and working."

•MANUFACTURING•

A Department Devoted to the Latest Devices Used by the Electrical Contractor and Dealer

New Flood Light

A new development in show window lighting has been announced by the National X-Ray Reflector Company of Chicago, the Show Window Spotlight. The unit though new has already become popular with display men and

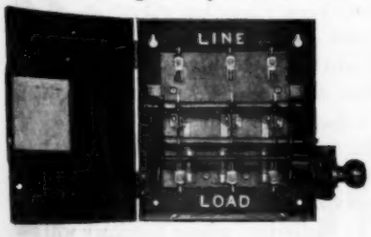
merchants throughout the country, it is claimed.

This Spotlight, known as No. 33, differs from the ordinary spotlight in this respect: it lights the entire window with a flood of direct light from the 200-watt Mazda C lamp which it takes, and concentrates the beam of light in the center of this flood. The purpose of this concentrated beam is to high light one article in the dispay without a sharp ring or cutoff of light showing at the same time.

Furnished complete as shown, with swivel supporting base, socket, holder, No. 800 reflector, color frame, and four pieces of colored gelatine. Height over all, 11 inches. Diameter of color frame, 11⅝ inches.

New Safety Switch

The Mutual Electric & Machine Company of Detroit has placed on the market a new Bull Dog Safety Motor Start-



ing Switch. The cut shows its general appearance and operation.

At a recent sales meeting tests were conducted in which the rotor of a 7½ h.p. 40 degree, 230 volt A. C., 3 phase, induction motor was blocked so that it could not move, and a 30 ampere 250 volt, 3 pole motor starting switch was thrown on and off repeatedly, showing a reading on the ammeter of from 100 to 130 amperes.

The manufacturer claims that the switch successfully withstood this test in every respect, and that it was in first class condition after the test was completed.

This switch is extra rugged, and as shown by the test was built to stand extreme conditions.

Otherwise the general construction is the same as that used throughout the Bull Dog Safety Switch line. It has received Underwriter's classification A rating for fire and safety, and also has been approved by the Associated Factory Mutual Fire Insurance Companies.

New Fuse Plug

A new fuse plug of the renewable type has been placed on the market by

the Hart & Hegeman Manufacturing Company, Hartford, Conn. Several novel and practical features are incorporated in this plug, which will strongly appeal to consumers.

The body of the plug consists of a fluted porcelain cap, into which a porcelain core is inserted. The porcelain cap carries the threaded brass member which fits the standard fuse receptacle. The separable procelain core, which is hexogonal in shape, carries the fusible element and the pointed contact button.

Examination of the fusible element may be instantly and easily made by slipping the core from the body cap, exposing the fusible element to view. Should the fusible element be blown, it is instantly discernable, and a new core carrying a perfect fusible element can be inserted.

Aside from the basic renewable feature of the H. & H. Fuse Plug, it offers the following advantages:

The top of the plug is entirely of porcelain—the fingers of the user touch no metal. That this feature is an advantage, arises from the fact that the average person is timid about touching any metal part of a fuse plug when the plug is in circuit; moreover, glazed porcelain presents a neater appearance.

The top of the plug has no flare, and there is ample space between plugs to permit the user's fingers to firmly grasp each plug.

The fluted design of the cap further facilitates the handling of the plug; easy and positive inspection of fusible element by merely pulling out core; and easy replacement of blown fusible element by merely inserting new core.

New Bridge Lamp

A new bridge lamp, designed particularly to extend over a card table, has been offered by the Faries Mfg. Company, Decatur, Ill. The arm slides down to make a conventional floor lamp

when desired. It is adjustable for height and arm has vertical swing adjustment besides extension feature.

The lamp is made of brass and the standard finish is polychrome black and

gold. It is illustrated in actual colors in the new Gift Lamp circular just published by the company.

Novel Insulation Process

The advantages of the Rimco Insulation Process, a product of the Rubber Insulated Metal Corp. of New York City, shows that it is a scientific method of bonding rubber to metal, thereby es-

tablishing a permanent chemical union between the two. In consequence the rubber cannot work loose, cannot come off, and cannot crack or break upon hard impact because of the semisoft compound, claims the manufacturer.

The rubber compounds are of high electrical resistance and are valuable in high tensison requirements. Rimco tools are valuable to linemen, as it is felt the margin of safety is greatly increased over the use of rubber gloves, etc. Such tools also insure added grip and less fatigue in usage.

New Lighting Unit

The Holophane Glass Company, New York, N. Y., has placed on the market a new lighting unit designed for use in schools, offices and stores.

This new unit is of the enclosing type and lamps from the top instead of the bottom. The upper portion has ac-

curately formed reflecting prisms designed to redirect the light downward.

The lower portion has combined horizontal refracting prisms and vertical diffusing flutes. The function of these combination refracting prisms and diffusing flutes is to give the proper distribution of light and to diffuse the light so that the unit has uniform low brightness.

An important feature of the unit is that it cannot be overlamped as the opening in the top will pass only lamps of the proper size. There are two sizes of this unit, No. 2170 for the 100-150 watt lamps and No. 2180 for the 200 watt lamps.

The unit is supplied as reflector globe only, complete chain pendant, or complete ceiling type fixture. For average conditions, the high utilization efficiency of 58 percent is obtained. The over all efficiency is 84 percent, it is claimed.

BX—A Trade Mark

Steel armored conductors were first introduced to the trade by the Sprague Electric Works of New York City under the trade mark BX more than 25 years ago. In a short time this trade mark had become universally known and by the time the first competitive make of armored conductor appeared on the market BX had become synonomous with armored conductor or cable. The title BX was loosely applied to any make of armored conductor and the misuse of the Sprague trade mark gradually became general.

In an endeavor to correct this condition, the Sprague Electric Works is carrying on a campaign of education. One measure adopted is the use of an orange and blue tag which will be attached to every coil and will distinguish BX from other makes of armored conductor. BX is the registered trade mark of Sprague Electric Works and cannot be legally applied to armored conductors of any other make.

Condensed Notes of Interest to the Trade

The Beardslee Chandelier Mfg. Company of Chicago has issued a handsome book covering its Sheraton and Minuet lighting fixtures. Forty-eight pages of illustrations and interesting material on home lighting designs and their use appear in this catalog. It is attractively printed, four pages being devoted through four color process to the true color reproduction of Minuet design.

In several announcements issued by Vice-President G. E. Emmons of the General Electric Company a reorganization of the general manufacturing department of that company is proclaimed. This reorganization which was effective January 1 includes the appointment of H. F. T. Erbin, heretofore manager of the Schenectady works, as vice chairman of the manufacturing committee—of which Mr. Emmons is chairman—and ranking member of the general manufacturing staff. The vacancy thus created in the position of manager of the Schenectady plant is to be filled by the advancement of Charles E. Eveleth, who has been serving since last September as assistant works manager under Mr. Erben. Mr. Eveleth will become works manager.

An attractive catalog has been issued by the Robbins & Myers Company, Springfield, Ohio, showing improvements in the design and construction of its fan line. Twenty-four pages set forth the company's products. Two colors are used throughout and the cover contains additional colors in order to portray the illustration accompanying.

The P. A. Geier Company of Cleveland announces a new complete set of attachments for the Royal electric cleaner.

O. D. Street, general manager of distribution of the Western Electric Company, has resigned his position to organize a company of consulting specialists to deal with questions affecting management and distribution. Mr. Street has been connected with the Western Electric Company for twenty-two years, most of that time in an executive capacity, and for the past ten years has been in charge of the company's operations through its chain of distributing houses.

The Arrow Electric Company of Hartford, Conn., announces that Edward P. Doherty has joined its sales organization. Mr. Doherty will travel part of the southern territory and will have his headquarters at Atlanta, Georgia. He will cover South Carolina, Georgia, Florida and border towns of North Carolina. For the past four years Mr. Doherty has sold wiring devices to all of the Atlantic Coast States.

H. O. Klug of the Betts & Betts Corp., New York City, has taken over the territory formerly covered by F. Maples consisting of Western Pennsylvania, Ohio, Michigan, Eastern Indiana, Northern Kentucky and West Virginia. Mr. Klug will probably make his headquarters in Cleveland. John Gilmore, formerly of the Barber Mfg. Co., replaces J. E. Eldredge, whose territory will consist of the New England States, the Hudson river towns and New York State.

1883 ORANGEBURG FIBRE CONDUIT 1923

"Electrical Tubes" of today, made of Orangeburg Fibre Conduit. The concrete in which these tubes are laid would have been a curiosity forty years ago.

This underground system of forty years ago served less than one square mile of territory in lower New York City for the original Edison Electric Illuminating Company. The drawing was made for Harper's Weekly, by W. R. Snyder—a famous news artist. The upper picture shows "Laying the Electrical Tubes" and the lower, "Testing Tubes for Insulation."

FORTY years ago, if an underground conduit installation worked at all, everybody was satisfied.

Today, underground construction must do more than this. Its cost, freight and trucking charges must be low. It must have the flexibility to meet unusual requirements. The system must have a low maintenance cost.

Consider how completely Fibre Conduit meets these requirements.

It is not expensive and is so light that its freight and trucking charges are far less than for other materials.

Light weight, long sections (60") and quickly coupled joints make laying easy and rapid.

It adapts itself to curved streets, grade changes and crossings with the least trouble. It gives greatest protection to its cables with the lowest upkeep expense.

JOHNS-MANVILLE Inc., Madison Ave. at 41st St., New York City
Branches in 56 Large Cities
For Canada: CANADIAN JOHNS-MANVILLE CO., Ltd., TORONTO

THE FIBRE CONDUIT CO. REG. U.S. ORANGEBURG PAT. ORANGE

Through—
Electrical Materials
FOR
Utilities
Jobber
Contractor
AND
Dealer

JOHNS-MANVILLE
SOLE SELLING AGENTS

Every Day, in Every Way

—our business gets results

The army of electragists is increasing by leaps and bounds. Hardly a day goes by that the ranks are not increased. Contractors and dealers, internationally, find membership in the Association vitally important.

So much interest is being shown in the Association of Electragists on account of the trademarked word electragist alone that the urgent question arises:

What is the Extent of this Widespread Interest?

It is felt that one way of measuring this interest is to note closely the methods of promoting the word electragist on the part of those privileged to use it.

While a number of such photographs are already on file, Association Headquarters is keenly anxious to use more pictures of electragist displays, showing the adoption of the name if possible. Won't those that have not yet honored Headquarters with views of their store—or old members whose views were received long ago—please send in pictures recently taken? Also include clippings of any insertions you have made in business or telephone directories concerning the word electragist.

Keep Headquarters informed!

Photographs will be published in the National Electragist as fast as space will permit.

ASSOCIATION OF ELECTRAGISTS
INTERNATIONAL
15 West 37th Street New York City

Cleveland's Finest Apartment Building

Architects
GEO. B. POST & SONS_____NEW YORK AND CLEVELAND
General Contractors
JOHN GILL AND SONS_____CLEVELAND
Electrical Contractors
THE DINGLE CLARK COMPANY_____CLEVELAND
Electrical Wiring Devices
THE BRYANT ELECTRIC COMPANY_____BRIDGEPORT, CONN.
New York Chicago San Francisco

On January first, in Cleveland, Ohio, Wade Park Manor was opened for occupancy.

This wonderful apartment building is a credit to the architect who designed it, the contractors who directed it and to the workmen who built it.

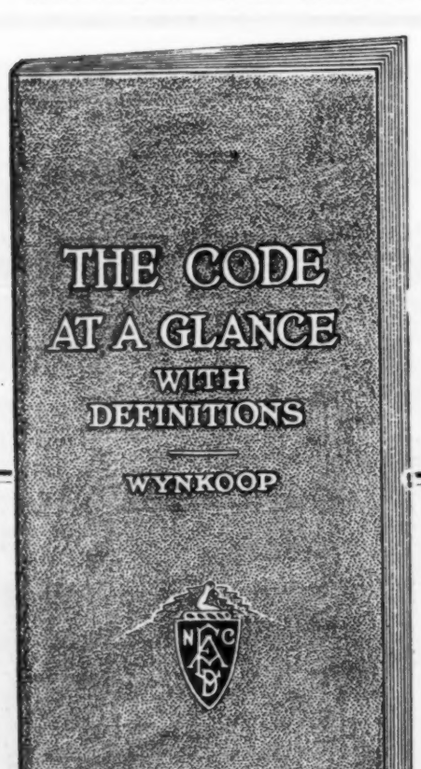
In such a conspicuous building only the most conspicuously satisfactory materials could be used.

Bryant Superior Wiring Devices were chosen as a matter of course.

THE BRYANT ELECTRIC COMPANY

BRIDGEPORT, CONN.

NEW YORK 342 Madison Ave.
CHICAGO 844 West Adams St.
SAN FRANCISCO 149 New Montgomery St.



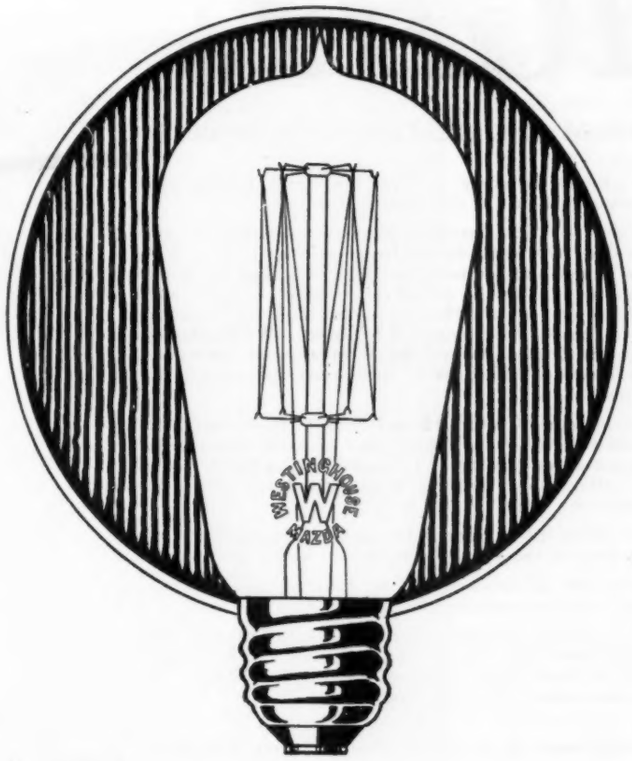
Prehistoric Questions

THIS is a story about questions. You have them—everybody has them. Questions are as old as the hills. They were asked in the day of Adam and before that prehistoric man developed special nods of the head to satisfy his desires in asking questions. But what has this to do with the *Code at a Glance?* Just this: There are more questions being asked now concerning things electric than ever before. You have been called upon to answer some of them yourself. And in the future your answering will be more frequent and precise. It will have to be! For the public is demanding more electrical knowledge and you are the one to give it because of your direct consumer contact. That means you MUST know the National Electrical Code and enforce it. And the *Code at a Glance* answers your questions concerning that. Requirements are tabulated in A.B.C. order. You don't have to look in a dozen places or so for the information you need—as you do in the Code itself. Finding just the point you want is made as easy as looking up a word in Webster's. The book—handy pocket size—also contains Code Definitions that clearly explain the many puzzling requirements, as when a person is "authorized," "competent," "qualified"; whether a spring hinged door is automatic, and all such. And it is sent to you postpaid for only a dollar bill. You are missing many a good dollar's worth by being without it. Send for a copy today, and be prepared to answer the next question you run up against concerning the Code.

The next National Electrical Code will not be ready for general distribution until after the middle of 1923

ASSOCIATION HEADQUARTERS

15 WEST 37th STREET ROOM 602 **NEW YORK CITY**



Westinghouse

MAZDA LAMPS

Manufactured in accordance with standard specifications and tested to prove their structural perfection.

WESTINGHOUSE LAMP COMPANY
165 BROADWAY, NEW YORK, N. Y.
Sales Offices and Warehouses Throughout the Country
For Canada: CANADIAN WESTINGHOUSE CO., Ltd., Hamilton, Canada

LIGHT,

FROM THE DEALER'S STANDPOINT

In practically every locality, industrial lighting is a promising field for the electrical dealer.

Neglect of this business is very surprising to one familiar with such dealer helps as the "Handy Wiring Tables and Illumination Data" supplied by Westinghouse. With the aid of this booklet, a dealer can quickly and accurately specify the kind and amount of equipment each prospect will need. Westinghouse Lighting Specialists and the Westinghouse Illuminating Bureaus will provide additional or special information.

Westinghouse-Cutter Holder-Socket Reflectors are "easy to wire"—the installation of each fixture taking but three minutes. This time-saving feature is a big selling point because it means a large saving in installation costs.

The necessity of good lighting is more apparent at this time of the year, the season of short, dark days.

There are prospects right in your territory. They mean repeat business. See them.

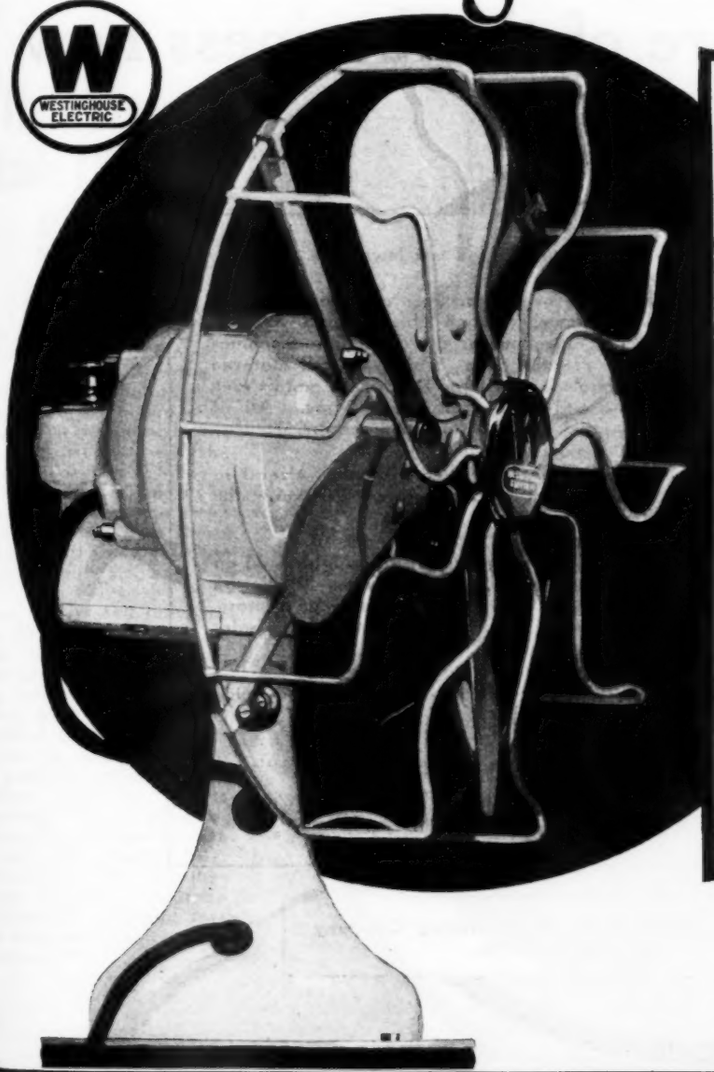
We would like to show you how easy it is to get the profits from the industrial lighting field and how easy it is to keep them coming your way. Write our nearest district office or direct.

Westinghouse Electric and Manufacturing Company
George Cutter Works, South Bend, Indiana

Westinghouse-Cutter Holder-Socket Reflector of Standard Angle Type as installed in this newspaper press-room.

Westinghouse

Speaking of Fans—



Look over this new Ivory Home Fan and the big Campaign that sells it.

There has never been a real home fan before but now Westinghouse has made one. It is Ivory finished. It harmonizes perfectly with home decorations.

Think of the attention it will attract in your window and store. Think of the sales you can make. The real intensive selling of fans to the home begins this year.

There's a real home campaign to help you sell the home fan. New literature, new National ads, new dealer helps—all in addition to the regular fan campaign.

Two separate campaigns are ready for you where there has only been one before. If you do not know all that Westinghouse has for you this year—go right down and see our nearest agent-jobber.

Westinghouse Electric & Mfg. Co.
Newark Works, Newark, N. J.

Westinghouse

The Small Motor Idea

Get your share of this business now

See what has happened to small motors in the last few years.

Why is the small motor idea going over? Because it is being sold to the public every day. In the home, vacuum cleaners and washing machines are selling it. In the office, motor driven adding machines and mimeographs are selling it. In the shop, countless small motored appliances are selling it. Schools are selling the small motor idea through their domestic science and manual training classes. All of these are creating a great potential demand for small motors.

Put a small motor in your window now and then. Display several in your store. Let people know you carry small motors. We know the demand is there, so why not cash in?

Don't forget that the American boy of today is more thoroughly sold on small motors than ever before. Play up your motors to him. When you get a chance, see the school principals and manual training instructors. Get them talking small motors to their pupils and they will make sales for you.

Other dealers have done these things, are doing them today, and reaping the benefits in sales.

How about yourself? Don't let this business slide past your door.

Give your small motor business a chance to grow. Feature Westinghouse small motors NOW!

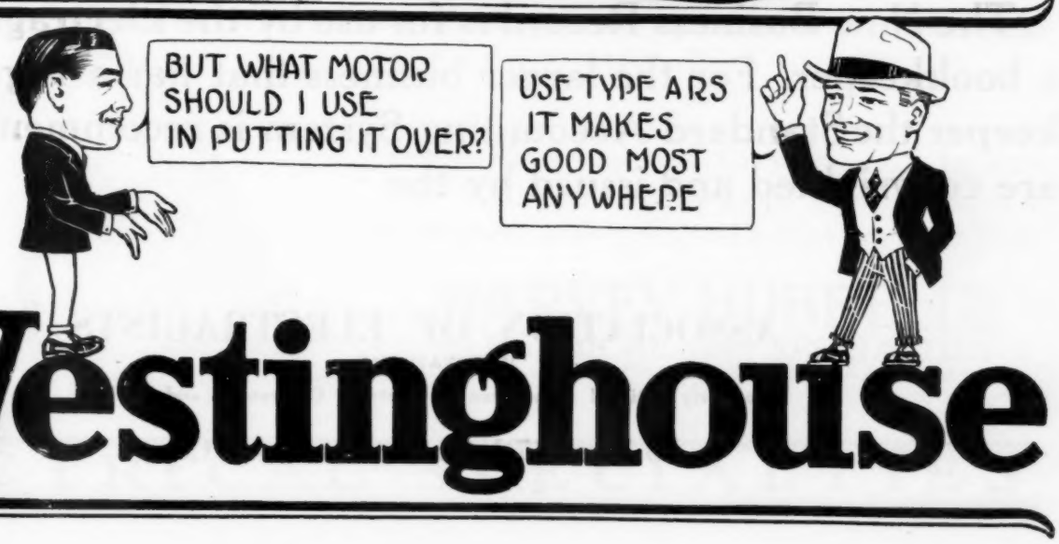
Westinghouse Electric & Manufacturing Company
East Pittsburgh, Pa.

Is Going Across

This Motor Made 750,000 Starts

A 1/6 hp. ARS motor which was being tested by the Ward Love Pump Company of Rockford, Ill., made 750,000 starts before failure. Upon inspection after this test it was found that the only trouble was the wearing down of one brush so that it failed to make contact. Otherwise the motor was in perfect shape mechanically and electrically.

Some dealers call the ARS the Bulldog motor. You can safely use it almost anywhere. It is a low starting current motor with a strong pull. A dangerous overload on this motor causes the motor speed to be gradually reduced, thus calling attention to the overload. This permits relieving the overload in time to save the motor from breakdown. The Westinghouse ARS motor will stand all kinds of wear and tear and does not require close attention.



Westinghouse

If you have no bookkeeper and want to know how much money you have; how much you owe; how much money is due you; how much stock on hand; how much stock you buy; how much you sell; how much it costs you to do business; how much profit you make; or how much you lose; and all other necessary facts regarding your business, you should employ the

New Business Record

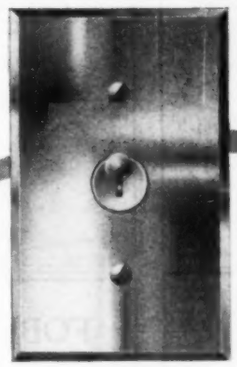
An easy way of keeping your accounts without a bookkeeper. Everything about it is plain and easily understood. It consists of only eight forms, and these show the money taken in and paid out; the bills to be collected and to be paid; the general expense, investment and stock. There also is binder and memo book.

Depend on it. It is handy, and always ready for you to use; it is reliable and accurate; it saves you time, money, and worry; it settles disputes and saves money for you; it helps you straighten out matters with your banker, your jobber, and the tax collector; it is a necessary factor in your business.

The New Business Record is for use by the Electragist without a bookkeeper. For the larger business that has a regular bookkeeper the Standard Accounting System is recommended. Both are copyrighted and issued by the

ASSOCIATION OF ELECTRAGISTS
INTERNATIONAL
Formerly National Association of Electrical Contractors and Dealers
15 West 37th Street, New York City

HUBBELL



No. 8141—Single Pole
No. 8143—Three Way

Reliable

Surface Type
No. 8421
No. 8171

A Complete, Profitable Line
Easily Installed and Reliable in Service

YOU can recommend these "Service Type" Toggle Switches for long, reliable service under all conditions. Both surface and flush types are operated by positive acting mechanisms—simple, yet sturdy. Large, deep-set binding screws permit easy wiring.

Flush Type No. 8141 is single pole and rated at 10 Amperes—125 Volts, and 5 Amperes—250 Volts; No. 8143 is three-way and rated at 5 Amperes—125 Volts and 3 Amperes—250 Volts.

Surface Type No. 8171 is made single pole and three-way in 5 Amperes—125 Volts, and 3 Amperes—250 Volts; No. 8421 is single pole and rated at 10 Amperes—125 Volts, and 5 Amperes—250 Volts.

HARVEY HUBBELL INC
ELECTRICAL SPECIALTIES
BRIDGEPORT CONN. U.S.A. 2355-U

ELECTRICAL SPECIALTIES

"Buy Electrical Supplies from Electrical Supply Jobbers"

QUICK REFERENCE LIST for the Convenient Use of Contractor-Dealers, in which Electrical Supply Jobbers in various Sections invite Your Patronage

American Electrical Supply Company
955 WASHINGTON BLVD.,
Chicago

A jobbing distributor which conducts its business with a full realization of its responsibilities to other branches as well as its own branch of the electrical industry.

E S & E C

Warehouses

HARTFORD SCRANTON WILKES-BARRE
ALBANY READING ELMIRA
BUFFALO

Sales Offices

1270 Broadway, New York City
Wholesale Only Policy
ESTABLISHED 10 B. G. (BEFORE GOODWIN)

OVER Forty Years of Constant Observation and Study of Your Requirements in Electrical Supplies.

National Electrical Supply Company
DISTRIBUTORS—JOBBERS
1328-30 New York Ave., Washington, D. C.

More than 100,000 Square Feet of Floor Space.
Large Stock. Prompt Shipments.
QUALITY! SERVICE!

FOBES SUPPLY COMPANY

Wholesale Electrical Supplies

SEATTLE SAN FRANCISCO
PORTLAND OAKLAND

For Service—

RUMSEY ELECTRIC COMPANY

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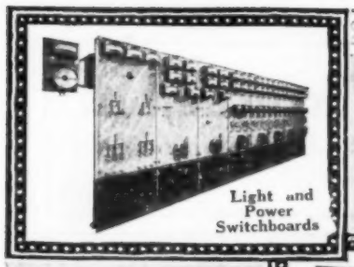
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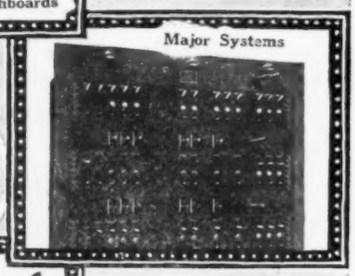
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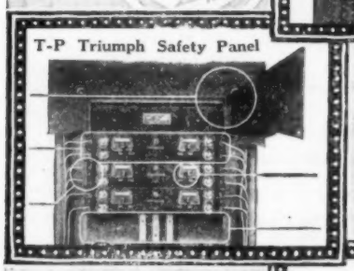
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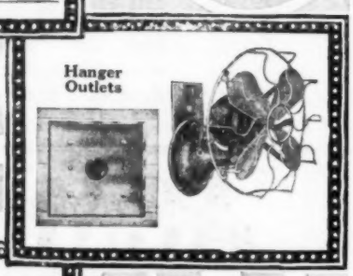
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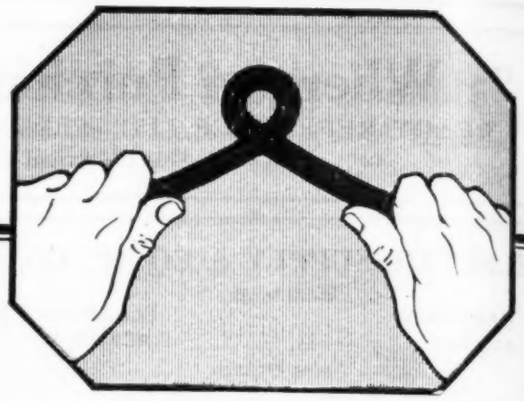

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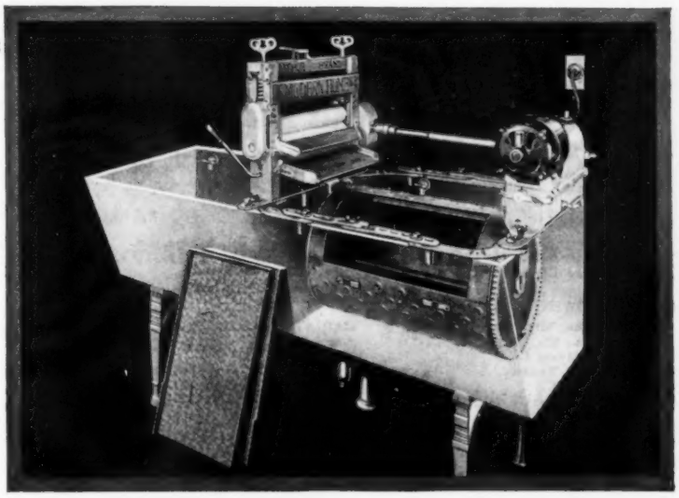

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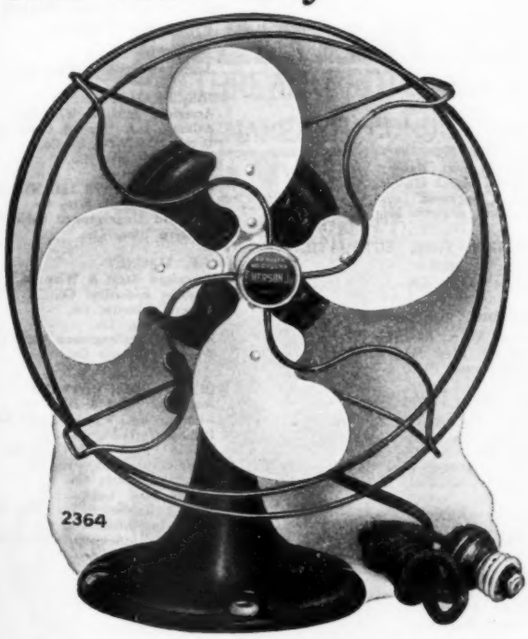

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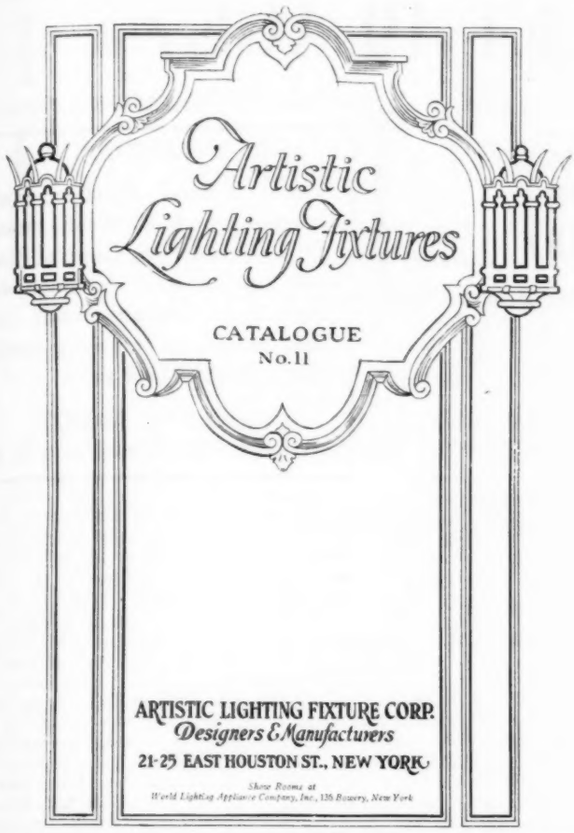

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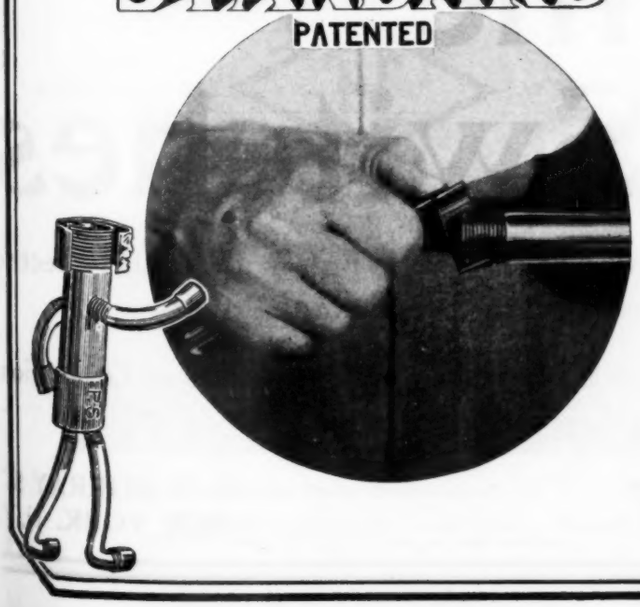

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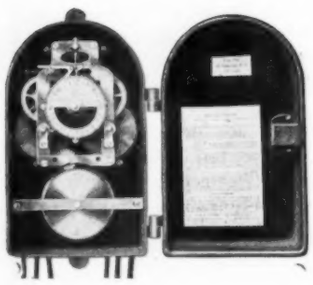

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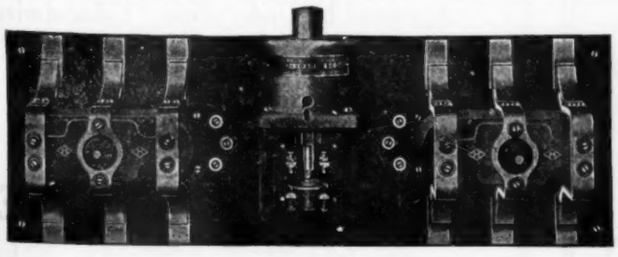

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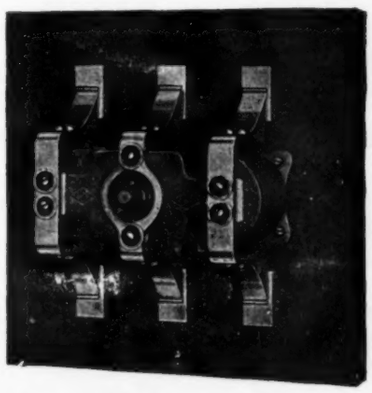

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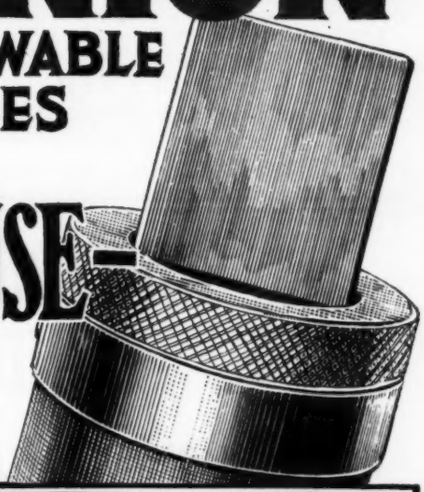

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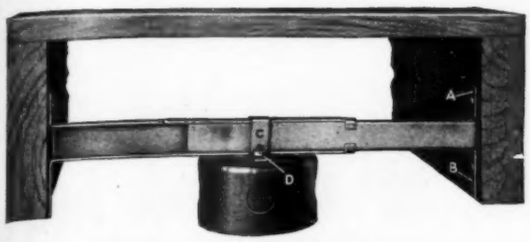

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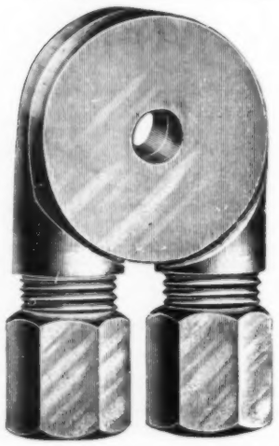

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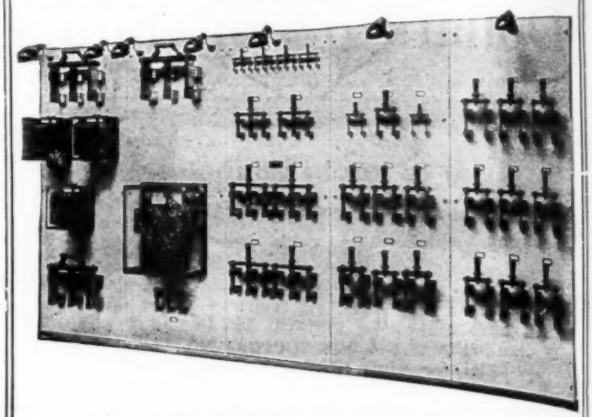

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RUBBER INSULATED

WIRES & CABLES

Manufactured to meet the demand of the electragist who recognizes the importance of **quality as the true measure of economy.**

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"Made for Users Who Want the Best"

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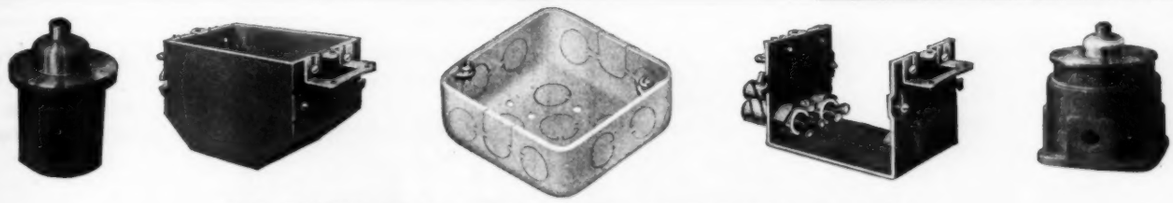

IT PAYS TO USE "THE QUALITY LINE"

HAVE YOU OUR CATALOG NO. 33-E?

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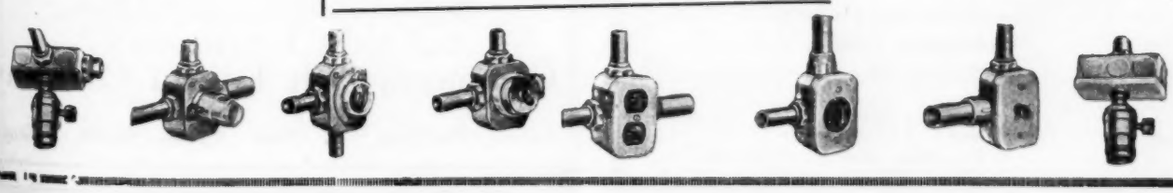

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"I know now," he said, "why I can't make the line of lamps that you manufacture! Why you have engineers and inspectors everywhere, watching every detail."

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HYGRADE LAMP CO

GENERAL OFFICE AND FACTORY SALEM MASS

Again We Say

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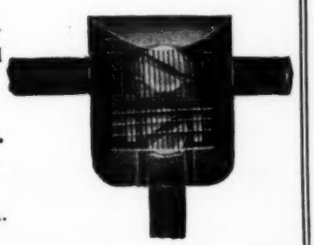
CONNECTORS

No solder—no blow torch—80% of your connecting time and trouble eliminated.

Let your men start using Walgers—They don't need a tool bag—Simply carry ample Walgers in their pocket to wire up the fixtures anywhere.

Approved by the underwriters and sold by all Jobbers.



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Chamber of Commerce Building
PITTSBURGH, PA.

We Manufacture:—

Rubber Covered Wire—Solid Conductor, Stranded Conductor, Flexible Conductor. Extra Flexible Conductor.

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Boston Insulated Wire & Cable Co.

Main Office and Factory:
Dorchester District
Boston, Mass.

Canadian Branch
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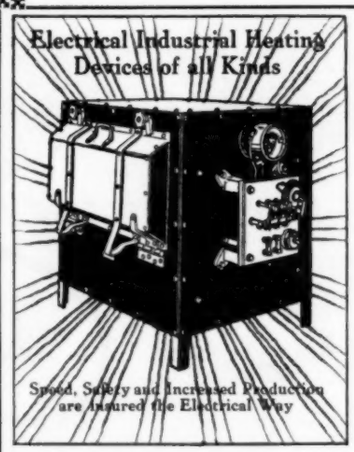
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Speed, Safety and Increased Production are Assured the Electrical Way

Electricity

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It has solved heating problems of diverse kinds for manufacturers of various commodities.

Because of their simple construction, electric heating devices require no elaborate mechanism. The heat control and saving in floor space are features possessed by no other devices. Electric Industrial Heating Installations require fewer employees for efficient operation.

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PARANITE

RUBBER COVERED WIRES AND CABLES

THE STANDARD FOR THIRTY YEARS

For all purposes. Inside, Outside, Aerial, Underground and Submarine Use.

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INDIANA RUBBER & INSULATED WIRE CO.
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One company—the Yellow Cab Manufacturing Company of Chicago—makes all the Yellow Cabs you see throughout the United States. No motor vehicle could stand the gaff of continuous service, incident to the cab business until the engineers of the Yellow Cab Manufacturing Company designed the Yellow Cab. This same engineering talent solved the problem of adequately lighting their offices by installing more than 100 Denzars in the office building illustrated above. The lighting unit that can be sold on a performance basis to hard boiled engineers is a good unit for any dealer to sell in his community.

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Insulated wire and cable for every transmission purpose—not made to meet a price, but with the idea of rendering maximum service to the purchaser and of reflecting maximum credit to the contractor who uses it.

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The American Sugar Refining Co.'s New Plant, Baltimore, Md.
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STANDARD
Light and Power Cables and Cable Accessories

were used throughout this wonderful plant which is the finest and most efficient cane sugar refinery in the world.
This is but one of the many high class installations to which we can refer as evidence of the recognized superior quality of STANDARD products.

For further information write our nearest office

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15 West 37th Street, New York City

National Electragist, formerly Electrical Contractor, was established 21 years ago as the official journal of the National Association of Electrical Contractors.

FEBRUARY, 1923

Radio on Time Payments

There was a time once when the installment plan of buying merchandise at retail was considered something to be ashamed of. Today automobiles, houses, washing machines, gas stoves, rugs, furniture, engagement rings, and in fact all lines of merchandise are sold on the time payment plan involving a cash payment and a payment each month until the article is all paid for.

Until quite recently radio apparatus has been sold for cash. Several manufacturers are now advertising to consumers offering radio receiving apparatus on the time payment plan. It does not seem unlikely that dealers will find it necessary to adopt this plan on the more expensive types of apparatus especially if competition from direct sales forces it.

It is estimated that over 75 percent of the automobiles today are sold on the time payment plan and it is further stated that were all automobiles sold strictly for cash, sales would drop 50 percent. If the automobile industry finds it possible to double its sales by the use of the time payment plan, there is nothing to prevent the plan being applied to any industry provided the proper machinery is used to insure payments. In the automobile industry, companies have been built up expressly for the purpose of financing the sales so that the automobile dealer will not have to use his own capital. There is not much possibility of the electragist finding any such agency for financing radio sales, at least for the present and until some agency presents itself, the dealer will have to carry his own paper, attend to the billing and bookkeeping, and make collections. To insure himself against loss he will have to attach to the sale price a fee and charge interest at the rate of 6 percent on the monthly payments. Any readers interested in a plan of this kind should write for more information.

The Problem of the Loud Speaker

Users and dealers alike have been having dissatisfaction with certain types of loud speakers. While it is true that the majority of loud speakers give no cause for complaint, it is equally true that there are enough unsatisfactory ones on the market to cause some uneasiness. Curiously enough the unsatisfactory types are not confined to the lower priced goods, some of the trouble makers being in the high price class.

The old adage, "The proof of the pudding is in the eating," holds good in the case of all loud speakers. You cannot tell whether they are good till you have heard them.

Loud speakers are of two general types, those that simply magnify the tone produced by the ordinary receiver and those that use outside current to increase the volume of tone. Either of these two types can be applied in a number of ways, as for instance, for attaching to a phonograph. The real solution of a successful loud speaker, in addition to its electrical and mechanical perfection, is its shape, material and size.

Sound waves require study and those who have mastered this subject are able to design apparatus that will give clearer and louder sound than those who have not. The earliest form of phonograph simply used a long tin horn or perfectly conical shape. The tone was far from satisfactory. Improvement in the shape of the sound deflector has done much for the success of the phonograph and the application of these same principles to the loud speaker will result in similar improvement.

Many experiments have been made so far and the improvement in tone in the present instruments over those made a year ago is quite evident. Materials such as tin, brass, alloys, aluminum, wood, concrete, plaster, etc., have all been used with varying success, but it would seem that the shape of the horn has more to do with the proper emission of sound than has the material, although obviously the material will affect the quality of the sound to some extent.

A still older industry that has had vast experience in sound production is that of pipe organ building. Builders of these beautiful instruments are able with the use of wood, brass, tin and paper to produce almost any kind of sound desired, and so accurate is their information that the quality of tone in the pipes on any one stop is quite alike all the way through the scale.

For the present the dealer should insist upon hearing loud speakers before he buys to determine the tone and operation of the loud speaker. By so doing he will practically eliminate complaints on the part of customers.

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and two million. The greatest part of these sets were purchased or bought in the early part of 1922. It is considered quite likely that a million more sets will be made or sold during this year.

Get your share of this business.

Broadcasting Interference

The interference of broadcasting stations with one another is a popular theme of conversation among radio fans these days. With the increase in the number of broadcasting stations and the gradual increase in transmitting power used, the 360 meter arrangement was out of the question.

With the new program arrangement and the use by some stations of 400 meter wave length, the situation was improved somewhat, but there is still a good deal to be desired. To correct local interference some of the powerful stations are deviating a little from the exact wave length. Here is a list of some of the stations with their call letters and wave lengths:

Station	*Call*	*Wave*
Medford Hillside, Mass.	WGI	360
Pittsburgh, Fa.	KDKA	360
St. Louis, Mo.	KSD	400
Chicago, Ill.	KYW	400
Chicago, Ill.	WMAQ	360
Anacostia, D. C.	NOF	412
Havana, Cuba	PWX	400
Philadelphia, Pa.	WFI	400
Philadelphia, Pa.	WOO	400
Louisville, Ky.	WHAS	360
Troy, N. Y.	WHAZ	400
Toronto, Canada	CFCA	400
Buffalo, N. Y.	WGR	360
Schenectady, N. Y.	WGY	403
Cincinnati, Ohio	WLW	360
Lockport, N. Y.	WMAK	360
Boston, Mass.	WNAC	360
Davenport, Ia.	WOC	400
Dearborn, Mich.	WWI	360
New York City	WEAF	400
Newark, N. J.	WJZ	360
Newark, N. J.	WOR	400
Ridgewood, L. I.	WHN	360

This is only a partial list but it can be used to illustrate the difficulties arising from interference. WHN, WOR, WJZ and WEAF are all within a few miles of each other and even the most limited crystal sets can usually get all of them. Under a timed program system, not all of these stations broadcast at the same time, yet when two are working at once there is some trouble. In Philadelphia the two principal stations operate at the same wave length but not at the same time. In Chicago KYW and WMAQ operate on different wave lengths.

To determine the extent of interference, an official operated a crystal receiving set midway between two broadcasting stations operating simultaneously, one on 360 and the other on 400 meters. He found that with a single coil tuner is was impossible to tune either station out, but with a two coil tuner there was no difficulty. Reception of a distant station when a station close by is operating offers difficulties.

With a more advanced type of receiving set there is no difficulty ordinarily in tuning in or out as desired but the smaller sets which cannot tune so sharply are the sufferers and they are numerically in the majority. We cannot propose any definite remedy for the condition at this time but doubtless the White bill now before Congress will contain provisions that will allow broadcasting over a greater range than is at present allowed. Intelligent thought and investigation is needed to clear the situation up.

The Need for Standardization

The recent conference in New York on the subject of radio standardization is timely. The purchaser of radio apparatus is indeed up against it so far as knowing what he is buying is concerned. All he has to go by is the goodwill of the manufacturer and owing to the very uncertain conditions under which the apparatus is installed, not many manufacturers have been able to determine the merits of claims on the part of purchasers and it is doubtful whether there would be any real rule to determine the fairness of many of the claims.

Complete receiving sets have been largely classified and sold according to the possible distance of reception which is not the way to classify them, but there is not another method of telling the customer what he is buying.

The same trouble exists in the matter of parts, only to a still greater extent. Condensers, transformers, etc., either have no ratings at all or have ratings which mean little or nothing as all the factors have not been considered in making the ratings. Dr. Dellinger, chief of the Radio Laboratory of the Bureau of Standards, very aptly compares the lack of definite designation of the accurate ratings of electric lamps which are rated in voltage and wattage, consequently the purchaser knows exactly what he is getting.

It is expected that much good will come of the standardization program but the work is necessarily slow and painstaking in character and immediate results cannot be expected.

Developments in Cuba

Owing to lack of adequate broadcasting facilities radio developments in Cuba have not kept pace with the progress of radio transmission in the United States, says Assistant Trade Commissioner Livengood, Habana, in a report to the Department of Commerce, but recently a high-power sending center has been established in the capital and the market for small receiving sets is expected to widen rapidly.

This station has not yet made arrangements to supply broadcasting service, but it will do so soon. The apparatus of the company operating this station, which has a capacity of 500 watts, is an exact duplicate of that used by the New York Telephone Company in its Walker Street station. Test messages from the new Habana station have been heard as far away as Princeton, N. J.

As in all tropical countries Cuban enthusiasts have met with difficulty because of static disturbances. In spite of all obstacles, however, a considerable number of Cuban amateurs have been experimenting in receiving messages and one or two in transmission.

Habana dealers are well equipped to supply radio apparatus in anticipation of broadcasting from the new Habana station. Interest in radio matters is thoroughly active and when facilities such as those of the United States are available the merchants believe that Cuba will offer a fine market for this class of merchandise.

Prominent Broadcasting Stations

Following Are Descriptions of Several Stations in Different Parts of the Country

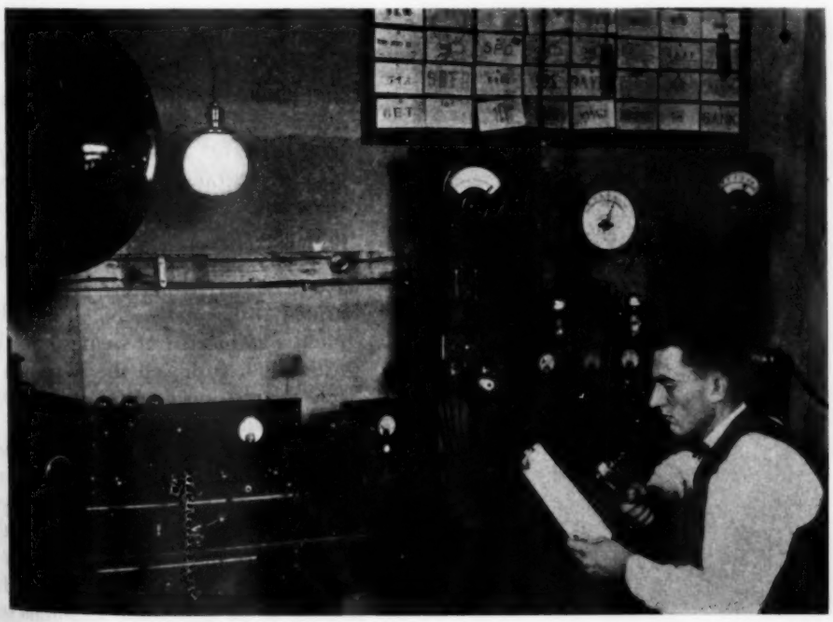
Station DD5, Denver, Col.

This station is operated by the Educational Department of the Fitzsimmons General Hospital, Denver, Col. It is an experimental station for the instruction of patient-students of the radio school and has been constructed and maintained entirely by the student body of patients who are exservice men, vocational training students, and enlisted men of the medical corps.

The power used is 50 watts antenna input. One 50 watt tube is used as an oscillator, one as a modulator, and one as a speech amplifier. The Colpitts oscillator circuit is used with several modifications and with a Heising modulator circuit.

The studio is across the hall from the operating room and is draped in heavy blue velour to deaden reverberations of sound. The studio contains only a piano and the microphone stand. The microphone is of the carbon granule type. Reception has been reported from California, Oregon, Washington, Texas, Saskatchewan, Rhode Island, New Jersey and Alberta.

The station has been in operation almost since broadcasting first started and previously operated under the call letters 6WV. A number of local celebraties have spoken to the radio audience, including Governor Shoup. The station is in charge of J. G. Eisenberg, Radio Instructor of the Fitzsimmons General Hospital.



J. G. Eisenberg, Operator as Well as Radio Instructor at DD5 Isn't Always in Such a Serious Mood

Station WHK, Cleveland, O.

Station WHK, Cleveland, Ohio, is one of the pioneer broadcasting stations of the country, having started popular entertainment programs considerably over a year ago. The plant is operated by the Radiovox Company and the manager is Warren R. Cox, who was the first phone broadcaster in Cleveland.

Excellent musical programs have been sent out and there are many other features. Among other things this station broadcasts lists and descriptions of stolen automobiles and this is said to have effected a remarkable decrease in the number of automobiles stolen and an increase in the number recovered. This is done in coöperation with the Cleveland Automobile Club.

The illustrations shows the studio of WHK with Lucille Phillips' Royal Gypsy Orchestra playing to the microphone. The heavy draperies, a feature of all studios, damps out all echo and sound reflection.

The transmitter used has four 50 watt tubes, two oscillators, two modulators, and a 10 watt voice amplifier. The normal antenna output is 100 watts. The speech input equipment consists of a three stage amplifier with specially designed microphones. The wave length is 360 meters.

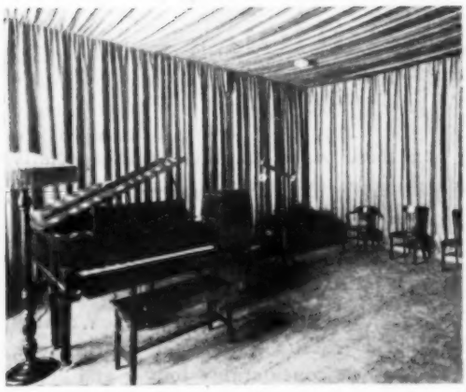
Springfield, Mass.—WBZ

Reception from WBZ, the Westinghouse radio station at Springfield, Mass., is considerably louder and clearer than it was last winter. There is a good reason for this improvement. The station was entirely rebuilt during the summer and is now one of the finest in the country.

The original station was opened in September, 1921, and was one of the pioneers in the broadcasting field. Only two or three stations now in operation have a longer record. It was designed to serve New England only, so that its power was limited. But though it was found to have a consistent range of about 500 miles south and west under good atmospheric conditions, it did not entirely fulfill its purpose. New England is peculiar from a radio standpoint, and for some unknown reason there were several areas in this section that WBZ could not reach. The new station, however, has remedied this situation and can be clearly heard on a detector tube alone all over the northeastern part of the country.

The new transmitting apparatus is of standard Westinghouse construction and is of the same type as that used by KDKA, KYW, and WJZ, although somewhat smaller. It has two oscillating tubes and three modulator tubes, each rated at 250 watts. Ten-volt A. C. current for the filaments is supplied by a transformer on a 110-volt circuit, and 2,000-volt D. C. current for the plates is supplied by a motor-generator set located outside of the station and remotely controlled from the transmitter. The tubes are kept cooled by a fan mounted behind the transmitter.

The transmitting antenna is supported by two structural steel towers, 142 feet high. These towers are located on the roof of the company's radio factory so that the height of the antenna above ground is 200 feet. The antenna is made up of six phosphor bronze cables spaced 5 feet a part and is 220 feet long between insulators. A counterpoise, of similar dimensions, is suspended 130 feet below the antenna. Special arrangements have been made



A Reproducing Piano, Victrola and Talking Machine are Used at WBZ

to prevent breakage of the antenna and counterpoise by ice, and a heavy current can be circulated through the antenna wires and down leads to prevent accumulations during ice storms.

The studio, which is located on the third floor of the building, is a room of 20 x 23 feet. Heavy carpets on the floor and shirred monk cloth on the walls and ceilings eliminate all echoes. Among the musical instruments used are a Knabe-Ampico reproducing grand piano, a Victrola, and a Brunswick Talking Machine.

The condenser type microphone, which is standard at present, is hung from a movable and adjustable stand. Its output passes through three stages of amplification before it goes to the transmitting room where three more stages of amplification are provided. The studio amplifiers are housed in a cabinet padded with felt. An Aeriola Junior receiver with a loop aerial is used to check the character of the performances as broadcasted.

WBZ operates every night from 7:30 to 9:00 p. m. eastern standard time. Its regular weekday program includes children's stories, agricultural reports, addresses, and music. On Sunday, chapel services are broadcasted at 3:00 p. m. and church services at 8:00 p. m. A number of well known people have addressed the radio audience from WBZ, including the governor of every New England state, and Charles P. Steinmetz.

Many Stations Licensed

At the end of last year the Radio Section of the Department of Commerce reported 576 broadcasting stations. As there was an increase of 11 during the month of December, it is safe to assume that the number now in existence is nearly 600. At the beginning of the year 1922 there were about 5 broadcasting stations.

A wonderful growth in a marvelous industry.

It is interesting to note that the total number of class B stations transmitting on a wave length of 400 meters is only 25. The passage and terms of the White bill now before Congress may result in a greater split up in wave lengths.

Heavy Draperies at WHK, a Feature of the Station, Eliminate all Echo and Sound Reflection

Wired Wireless Received

General Squier's System Satisfactorily Demonstrated

The demonstration of a new and unique method of communicating and broadcasting over electric light and power lines, by means of General Squier's system of wired wireless, at the Bureau of Standards in Washington on January 8 indicates that within a short time all consumers of electric current may be able to plug in their radio sets to their lamp sockets and receive information and entertainment broadcasted by the large light and power companies. The system is controlled by the North American Co. of New York, which owns and operates the lighting utilities of Cleveland, Milwaukee, St. Louis and a number of other cities and which has secured an exclusive license under General Squier's patent rights for this purpose and is now developing the plan.

With the aid of small condenser in series with vacuum tube receiving sets, or a special plug, consumers of electricity will be able to receive broadcasts from their electric wires just as they get juice to operate the flat iron, electric toaster or hair curler today. One button will produce jazz, another news and a third grand opera, as soon as the power companies start broadcasting over their wire systems. The ether will in no way be disturbed by this sort of direct radio broadcasting, and Secretary Hoover will not have to assign wave lengths or worry about interference with other stations using the ether—there will be no interference as the air is not used.

With the aid of a regulation broadcasting set at a sub-station of the Potomac Electric Power Company, messages were transmitted over this company's lines carrying 2,400 volts to the Signal Corps Laboratory, Bureau of Standards in Washington, where they were received by means of a tube set coupled with condensers. The sending station was located at Georgetown. The wave which followed the wires was of 5,000 meters and a transmitting current of 0.050 amperes was employed.

Following tests of General Squier's invention in Cleveland last May and further trials in New York in August the North American Co. concluded that a practical application of the system was of value and would permit the furnishing of an additional important service to lighting and power customers. Since October, R. D. Duncan, Jr., chief

radio engineer of the company, has been perfecting the methods.

At the public demonstration made in Washington, Duncan made the following statement:

Makes Important Statement

In coöperation with the Potomac Electric Power Company, experiments have been under way for some time during which the voice has been transmitted over the high voltage lines of the latter company from the Georgetown and the Tennelytown sub-stations and received at the Bureau of Standards and at different points in Chevy Chase and Maryland. This system of communication, referred to in the past as wired wireless, is the invention of Major General George O. Squier, at present chief signal officer, U. S. Army, and consists essentially of substituting for the transmitting and receiving antennas of radio stations, the electric light wire network of a city. Instead of the high frequency energy being radiated through space in all directions as with radio, it is confined and directed to flow along definite paths from the transmitting station to the various receivers. During the recent experiments the two sets of transmitting apparatus were connected through special circuits to the 2,400 volt three phase distribution system. The receiving apparatus was plugged directly into the light socket as is done with an electric iron, toaster or other familiar appliance.

The broadcasting was carried on simultaneously with the normal operation of the electric power system, there being no interference with either system by the other.

The Need for Radio Standardization

Leading Organizations and Bureau of Standards Consider the Matter at New York Meeting

Leading organizations in the radio field attended a meeting in New York on January 12 at the call of the Bureau of Standards to consider the possibility of radio standardization. In coöperation with the American Engineering Standards Committee the Bureau called the meeting at the instigation of:

Institute of Radio Engineers
National Radio Chamber of Commerce
Radio Apparatus Section, Associated Manufacturers of Electrical Supplies
National Retail Dry Goods Association
American Radio Relay League
Radio Corporation of America

The meeting was opened with an address by Dr. F. C. Brown, acting director of the Bureau of Standards, who recited the conditions leading to the calling of the meeting and gave the general scope of the possible standardization program. He was followed by Dr. J. H. Dellinger, chief of the radio laboratory of the Bureau of Standards. Dr. Dellinger told in more detail of the developments leading to the calling of the meeting and of the possible benefits to be derived from standardization work. Several other speakers prominent in the radio world addressed the meeting, all stressing the importance of standardization along various lines.

After all speakers on the program had been heard from, the chairman, Dr. Brown, called for comments from any who desired to speak and a number of organizations represented by delegates voiced their approval of the purposes of the conference. All being agreed that standardization was necessary, a Sectional Committee was appointed to be sponsored jointly by the American Institute of Electrical Engineers and the Institute of Radio Engineers. This is a sectional committee of the American Engineering Standards Committee and the latter will of course have final say in all standardization work taken up. The Sectional Committee has representation from all interested organizations. All organizations represented at the meetings are to have representation and probably some others that were not represented. An advisory committee will help to decide preliminary matters relative to the Sectional Committee

The purpose and aims of the conference and the work of the committee is very well set forth in Dr. Dellinger's address which follows:

The widespread interest in radio has brought with it an increasing demand for uniformity and dependability in radio service and apparatus. The lack of any such standardization has been brought to the attention of the Bureau of Standards by producer, distributor, and consumer. The consumer has been the chief force behind the demand that something be done. When one purchases an electric lamp he receives with it a statement of the voltage on which it operates and the power it consumes. When a radio set is purchased the conditions of use may be anything and there is no statement of performance. Many purchasers of radio parts, such as coils, amplifier transformers, rheostats, telephone receivers, have complained that they could get no statement whatever of significant constants of the apparatus nor of its normal performance. Purchasers must have a basis of judgment or they will be driven by a few unfortunate experiences to stop purchasing radio equipment altogether.

Manufacturers and retailers have felt the need and made some progress toward reliable specification of their products, but there has not been previously a concerted movement to introduce uniformity. Some manufacturers and salesmen have fallen into the natural error of rating receiving sets in miles of receiving distance, suppressing such factors as antenna height, power of transmitting station, local interference, etc. Various manufacturers have from time to time pointed out that a beginning should be made in radio standardization.

The need was emphasized by a request for assistance which the Bureau of Standards received from the National Dry Goods Association and the Electrical Testing Laboratories last May. The retail department stores distribute a very large quantity of radio apparatus and they had found that such apparatus varied enormously in quality and performance. Lacking means for determining what apparatus was satisfactory and what should be rejected, they found it difficult to maintain the goodwill of their customers. They desired to have tests made by such institutions as the Electrical Testing Laboratories but both organizations felt the lack of standard testing methods and performance ratings. Representatives of the two organizations visited the Bureau of Standards and an outline of methods for testing receiving sets was agreed upon for tentative use. It was recognized that the methods needed further development and simplification. Besides coöperating in the establishment of methods, the Bureau of Standards undertook simple to make measurements and calibrations of the laboratory standards used by testing laboratories.

It became increasingly apparent that there was need for beginning a standardization program that should have the radio interests behind it and should be so organized that there would be substantial certainty of its becoming effective. As an outgrowth of its research work and its contact with industry the Bureau of Standards has ininitiated standardization programs in various lines. For example, the Bureau has coöperated with the battery industry in the production of detailed specifications for dry batteries and storage batteries. It is recognized that radio is not at all ripe for standardization as extensive as in the battery industry.

XUM

As a result of discussions by representatives of the Bureau of Standards with secretaries of the Institute of Radio Engineers and the American Engineering Standards Committee, the Bureau called an informal meeting with representatives of seven general organizations interested in radio on Sept. 27, 1922. The result of this meeting was the formal request from each of the organizations that the Bureau of Standards call a general conference in coöperation with the American Engineering Standards Committee. The Bureau accordingly issued invitations to the present conference, limiting the invitations mainly to organizations, trade associations, etc. On December 20 representatives of the Bureau again met with representatives of the organizations which had requested the calling of the present meeting, to report on the action the Bureau had taken and to discuss in a preliminary way the questions which had been prepared as agenda for the present conference. The present situation therefore is that the organizations which requested the calling of this conference have agreed through their representatives that it is practicable to lay the foundation of a standardization program at the present time.

The scope of the present conference was purposely made very broad in the agenda. It is of course clear that standardization can not be undertaken at once over the whole field. The breadth of scope, however, gives an opportunity for the presentation of any phases of the subject which any member of the conference deems important. While the Bureau in calling the conference, sought to have the representation mainly through trade associations and other organizations, no manufacturer or other person who has expressed a desire to attend the conference has been barred. It is anticipated that there will be no need to provide any rigid rules for procedure or voting in the present conference since any actions taken must be substantially unanimous if the results of the conference are to be effective.

The Bureau of Standards does not consider that this conference or such program as may come out of it is its own movement. It was glad to call the conference as requested and will be glad to participate, as an unbiased agency, in keeping the work going if the conference so requests. The Bureau hopes to assist by participation in the technical work on some of the committees that may be organized. The American Engineering Standards Committee has provided a definite machinery and committee organization for the carrying forward of projects of this kind and for establishing specifications and securing adherence thereto by all concerned. The Bureau of Standards has no enforcing powers of any kind. A suitable action which the conference might take to make permanent the movement which it initiates would be to request the American Engineering Standards Committee to organize a socalled Sectional Committee on radio standardization. If this is done definite machinery involving committees, etc., such as function in many similar lines will be established. The methods of the American Engineering Standards Committee will be described later by Dr. P. G. Agnew. It is important that it be understood that every organization interested will be given an opportunity to participate in any of the committees or technical work which it desires.

It is obvious that the present meeting can serve only to organize and to give expression to the general trend of standardization desired by the industry and the country. It is hoped that there will result from it such coöperation of radio interests as will result in the steady improvement of radio apparatus and service.

New York Has Good Show

Broadcasting Was Broadcasting and Exhibits Were Exhibits—No Noise

The American Radio Exposition, held in Grand Central Palace, New York, was very successful both from the standpoint of attendance and in the number of exhibitors. All of the ground floor of the great show building was occupied by tastefully arranged exhibits. The plans of the management were very carefully made and there was no such terrible jumble of loud speakers receiving from different stations at the same time that has characterized some of the previous shows. All reception was on one set of loud speakers grouped from the balconies at each end of the hall and all exhibits were exhibits only, not noise makers.

In addition to the great number of trade exhibits, there was a special display of homemade sets varying from the largest and most complicated to those that would literally go in a peanut shell.

The exposition was formally opened by Mayor Hylan and during the week of December 21 to 28, programs and speeches were broadcast daily before a large and interested audience. Following is a list of the exhibitors:

Western Electric Co., Inc.
Radio Corp. of America.
General Insulate Co.
Pacent Electric Co.
National Carbon Co.
DeForest Radio Telephone & Telegrah Co.
Sleeper Radio Corp.
C. Brandes, Inc.
Sound Wave Corp.
Hutchison Radio Co.
Manufacturers Patent Co.
Novo Manufacturing Co.
Henry Hyman & Co.
Holtzer-Cabot Electric Co.
Clapp-Eastham Co.
Stromberg-Carlson Tel. Mfg. Co.
National Airphone Corp.
Dubilier Condenser & Radio Corp.
Executive Radio Council, 2nd District.
National Radio Chamber of Commerce.
American Radio & Research Corp.
American Radio Relay League.
Coto-Coil Co.
Weston Electrical Instrument Co.
Signal Electric Co.
Scholes Radio & Mfg. Co.
Malone-Lemmon Laboratories.
A. H. Grebe & Co., Inc.
Electric Storage Battery Co.
Burgess Battery Co.
Crosley Manufacturing Co.
Experimenter's Information Service.
Copper-Clad Steel Co.
Jewett Manufacturing Co.
Musio Radio Co.
Formica Insulating Co.
Capitol Phonolier Co.
Marko Storage Battery Co.
Eisemann Magneto Co.
Stanley & Fatterson.
S. D. Tuska Co.
Radio Industries Co.
A. D. Cardwell Co.
Fiber Products Co.
Willard Storage Battery Co.
Davis Radio Co.
Post Electric Co.
Boissonnault Co.
Radio Mica Products Co.
Electric Specialty Co.
Feri Radio Manufacturing Co.
Tait Knob & Dial Co.
Bel-Canto.
Ackerman Bros.
Radio Guild.
Lefax, Inc.
Milliken Bros. Mfg. Co.
American Bell-Radio.
National Radio Products.
Brilliantone Radio Products.
Engravers & Printers Machinery Co.
Consolidated Radio Call Book Co., Inc.
States Radio Co.
Moon Radio Mfg. Co.

Radio Association Meets

A meeting of the Radio Trade Association, a national organization, was held in New York during the week of the radio exposition at Grand Central Palace late in December. Over four hundred delegates attended.

The objects of the organization are the development of the radio industry through standardization of products, the control of broadcasting to eliminate interference, and the promotion of the industry to the public.

URADIOLA

---"Engineered Radio"

THINK of being able—*actually able* to hear each and every broadcasting station within a radius of 600 miles! No matter what the weather, *URADIOLA* Radio Frequency Type Receivers positively bring to the operator the most satisfactory results on a loop antenna consisting of 18 feet of wire. And stations within 20 miles require no ground or antenna connections.

One of the Most Popular Models is This BR2

One step Radio Frequency, Detector, Tuner and Two Step Amplifier, in attractive, hand rubbed solid mahogany cabinet.

Note This About Uradiola Outfits:

No outside wires. No Underwriter's requirements to worry about. Perfectly balanced circuit. Easily tuned by beginners. Stations brought in or out as desired. Volume of sound fills a large room with ease.

Liberal discounts to jobbers and dealers.

Order a sample set to convince yourself first.

UNITED RADIO LABORATORIES

"Engineered Radio"

411 East Pearl St. **Cincinnati, Ohio**

Looking Into 1923

The New York *Evening Mail* presages the following developments:

1. The number of radio manufacturers will be cut in half.
2. There will be important changes in broadcasting, with fewer stations and better programs.
3. The Department of Commerce will change the wave-length ranges of the broadcasting stations.
4. Big legal battles over the ownership of important patent rights may be expected.
5. Numerous improvements in receiving equipment.
6. Americans will be listening in on the programs of English broadcasting stations.
7. Outside aerials will continue to disappear through the development of radio-frequency receivers of high sensitivity.
8. Further development of the batteryless receiver, operating from the lighting circuit.
9. Important developments in the elimination of interference.
10. Duplex transmission with stations operating on two wave lengths simultaneously will be used.
11. Fewer and better radio magazines.
12. Uni-control receiving sets.

Radio Laws

The Following Extracts Are Taken From the Crosley Radio Weekly

A question arising in the minds of a great many of the new radio fans is relative to the United States laws and regulations regarding radio communication.

Below are a few of the most important extracts reprinted from the government pamphlet "Radio Laws and Regulations of the United States."

The owner of an amateur radio transmitting station must obtain a station license before it can be operated, if the signals radiated therefrom can be heard in another state; and also if such station is of sufficient power as to cause interference with neighboring licensed stations in the receipt of signals from transmitting stations outside of the state. Radio telephone stations, as well as radio telegraph stations, are covered by these regulations.

Transmitting stations must at all times be operated under the supervision of a person holding an operator's license, and the party in whose name the station is licensed is responsible for its activities.

There are three classes in which amateur station licenses are divided. Special amateur stations known as the X, Y and Z stations are usually permitted to transmit on wave lengths up to 375 meters. In cases such as school and experimental stations, increased power and longer wave length are sometimes allowed.

General amateur stations are permitted to use a power input of 1 kilowatt, and which cannot use a wave length in excess of 200 meters.

Restricted amateur stations are those located within 5 nautical miles of naval radio stations, and are restricted to ½ kilowatt input. These stations are governed by the same wave length restrictions as those governing general amateur stations.

Malicious or wilful interference on the part of any radio station, or the transmission of any false distress signal or call is prohibited. Severe penalties are provided for violations of these provisions.

Applications for operator's and station licenses of all classes should be addressed to the radio inspector of the district in which the applicant or station is located. Radio inspector's offices are located in the following places:

First District—Boston.
Second District—New York City.
Third District—Baltimore.
Fourth District—Norfolk, Va.
Fifth District—New Orleans.
Sixth District—San Francisco.
Seventh District—Seattle.
Eighth District—Detroit.
Ninth District—Chicago.

No license is required for a receiving set, but the secrecy of all messages must be preserved.

There is no fee at present for either operator or station license.

Arlington Official Station

Commencing on January 3, the powerful government radio station at Arlington, near Washington, became the official broadcasting mouthpiece of the government, taking over the work which had been handled up to that time by the other government station NOF at Anacostia. From now on all official proclamations to be broadcasted will be sent out through NAA. This will include the famous Naval and Marine band concerts which have been a weekly feature from NOF.

For over a year government engineers have been experimenting with the equipment at NAA as a possible means of broadcasting. All the data gained through the operation of NOF has been applied to the installation at Arlington.

The broadcasting equipment at NAA consists of six 250-watt transmitting tubes, thus giving the station a rating of one and one-half kilowatts.

Secretary Hoover has issued a special broadcasting license to Arlington which will permit it to broadcast on 710 meters, but the equipment will also allow wave lengths of 400 to 2,300 meters.

When transmitting on 710 meters a single wire antenna stretched from the top of one of its 403-foot masts will serve as an aerial. This service can be continued without interference even when the powerful transatlantic equipment is working on 2,300 meters.

The Attendance at the Recent Show in Columbus, Ohio, Was Over 10,000 and One of the Features Was a Special Broadcasting Demonstration

SHERMAN
GROUND CLAMP

APPROVED

WHY?

1. All copper in one piece securing high conductivity and a tight grip.
2. Furnished with *approved* soldering lugs.
3. Equally good for soldered or solderless connections.
4. Adjustable—three sizes covering all requirements.
5. Easiest and quickest to apply.
6. A screw-driver only necessary.

"None are as good—few are as cheap"

H. B. SHERMAN MFG. CO.
Battle Creek, Michigan

Why Use Storage Batteries?

WHEN YOU CAN OBTAIN THE SAME GOOD RESULTS WITH A

1½ VOLT DRY CELL

The Ideal Socket

BRU No. 5—Pat. Pend.

The BRU No. 5—Moulded Bakelite Socket is designed to accommodate the WD-11 tube and it is unaffected by heat, weather and is unbreakable.

Springs are of Phoaphor Bronze, and the special "cupped" design insures a firm contact so essential in Radio Work.

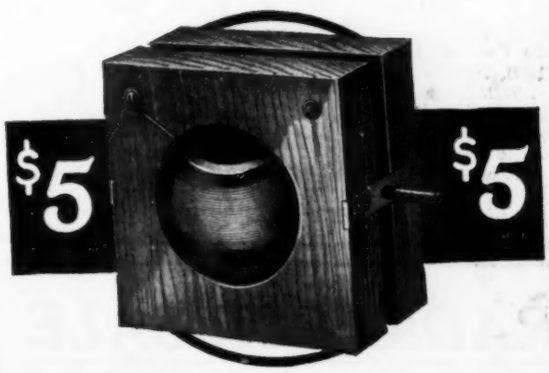
BRU NO. 5 SOCKET, 75 Cents

Write for good dealers discounts

BRUNO RADIO CORPORATION
152 W. 14TH STREET, NEW YORK

QUEENS *Vario Coupler*

QUEENS *Vario Meter*



WE SELL THESE GOODS TO YOUR CUSTOMER

But we need a place where he can secure them quickly.
Let us tell you how we do it.

Write for our proposition

QUEENS RADIO COMPANY, Inc.
12 FOREST STREET **WINFIELD, L. I.**

DISTRIBUTOR (GE) PRODUCTS

Radio

has again come into its own. The demand has become great, but only for quality merchandise.

To this end, we are specializing in the products of the Radio Corporation of America, and desire to serve all dealers who wish reliable equipment.

THE PHILADELPHIA ELECTRIC COMPANY SUPPLY DEPT.
130-132 South Eleventh Street
Philadelphia

JOS. M. ZAMOISKI COMPANY
The Electrifiers

Radio Building, Baltimore, Md.

—DISTRIBUTORS—

Radio Corp. of America
Colin B. Kennedy Co.
Wm. J. Murdock Co.
Acme Apparatus Co.
Atwater Kent Mfg. Co.
Nathaniel Baldwin, Inc.
C. Brandes, Inc.
Clapp-Eastham Co.
DeForest Radio T. & T. Co.
Chelsea Radio Co.
Burgess Battery Co.
Remler Radio Mfg. Co.
Adams-Morgan Co. "Paragon"
Dayton Fan & Motor Co.

PROMPT DELIVERIES

RADIO FOR SALE

Two or three beautiful receiving sets containing detector, amplifier, three tubes and beautiful mahogany cabinet at ONE-HALF of the list price. Anyone desiring a radio set that is efficient, compact and beautiful at the same time, will please address **Box L,** care of **NATIONAL ELECTRAGIST, 15 West 37th Street, New York City.**

Filament Heating Transformers

The Filament Heating Transformer made by the Standard Transformer Company of Warren, Ohio, is used as the name implies for heating the filaments of radiotrone tubes used as oscillators and kenitrone tubes used as full wave rectification where alternating current supply at 60 cycles is used as a source of power for radio telephone transmitting circuit.

In transmitting circuits it is not essential to use a battery for filament heating as it is in receiving circuits, because the commercial frequency at the transmitting end does not affect the reception at the receiving end.

These transformers are rated at 100 watts and have sufficient capacity to supply filament current to four 5 watt radiotrone oscillator tubes and four 5 watt kenitrone rectifier tubes.

The Standard Filament Heating Transformer has a core of nonageing high test silicon steel. The copper circuit is made of enameled wire with insulation between winding layers and primary and secondary of sufficient value to withstand a test voltage of 2,500 volts at 60 cycles. The primary is wound for nominal voltage 110 volts 60 cycles. Secondary 10 volts with middle tap at 5 volts. The primary is equipped with master lever switch which provides for voltage adjustment in 3 volt steps from 103 to 115 volts. This arrangement eliminates the need of filament rheostats as it provides for a wide range in filament voltage.

The active parts of the transformer are housed in royal blue porcelain end plates which serves as added insulation.

Roller-Smith Loud Speaker

A loud speaker known as the Universal is being made by the Roller-Smith Company, 233 Broadway, New York City. The volume of sound is more than ample for home use in

which case no battery is needed. The large bell allows the sound waves to leave the horn without resonance and without metallic effect. It is said to eliminate light static and weak code signals.

The receiver units are carefully matched and built in. The horn is 21 inches high with 10½ inch bell, both bell and horn being made of cast aluminum. The cord is 5 feet long with pin terminals which can be quickly attached to any standard plug. The horn and receiver units are designed to work together. The price is $18.

What Westinghouse Did in 1922

In a compilation of engineering achievements of the Westinghouse Electric & Mfg. Co. for the year 1922, the following is said of the radio portion of the company's activities:

Interest in this new and rapidly developing art remains undiminished in the minds of the public and meanwhile Westinghouse engineers behind the scenes are actively engaged in new experiments and investigations which are leading to constant improvement and new fields of application.

During the year the following receiving units have been put upon the market:

Audio amplifier for Aeriola Senior and Aeriola Junior.
Radiola R.S.—A dry battery radio receiver with amplification.
Radio frequency amplifier, type AR, for use with RC sets.
Antenna coupler for increasing selectivity of existing apparatus.
Radiola Grand, a loud speaking receiver especially designed for simplicity, efficiency and sensitivity.

In radio transmission, the Westinghouse Company has made great advances in the conversion of sound to voice currents.

Great progress has been made in the development of broadcasting systems and transmitters.

Research into the various methods of putting oxides of abrium and strontium on platinum iridium ribbon for radio tubes has resulted in the perfection of a method which gives a filament superior to any at present employed. Other investigations have resulted in improving the uniformity and serviceability of these tubes.

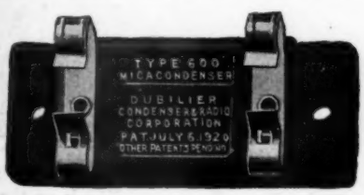
For the operation of radio tubes of the dry battery type, an all metal Lelande cell has been produced which will stand rough handling and which will not leak if upset and which has all of the desirable characteristics of the dry battery with the very great added one of almost unlimited shelf life with a good ampere hour rating for a given amount of material.

A new type of microphone free from inertia effects has been developed primarily for use in the transmitting equipment of the radio broadcasting stations. This device gives much more accurate reproduction of the sounds as it responds equally well to the sound frequencies throughout the audible range. It is probable that it will be found useful in other applications.

A.C. radio receiving tubes have developed in which an oxide coated cathode is heated indirectly by heating element operating from alternating-current. This permits the use of power supply for heating the tube without introducing any noise incident to the frequency of the supply circuit.

Dubilier Micadon Condensers

The Dubilier Micadon, type 600, is a condenser made in small capacities by the Dubilier Condenser & Radio Corporation, 48 West Fourth St., New York City. Each unit,



after being assembled is enclosed in a black composition case provided with terminals. India mica is used as the

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(CUT IN 2-FOOT LENGTHS AND PACKED IN BUNDLES OF 100)

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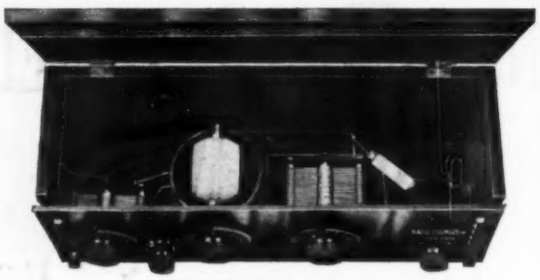

(Panel size: 7" x 18")

They will buy this ASSEMBLY SET

There are a-thousand-and-one different radio sets manufactured in the United States, all presumably having a "reason for being." But the one that you are interested in is the one that will SELL and give you turn-over. Your customers will buy this Assembly Receiver—

Because: It is a real tube and the best of its kind. It is not a toy set.

Because: It is the lowest priced set of its type made. Its low cost puts it within the reach of the largest buying class. The total cost is what counts. This set gives more for the money than any other set in the same class.

Because: Its simple circuit design and mechanical lay-out are perfect. Its double tuning feature and Litz wound rotor in variocoupler give it extraordinary tuning sharpness and high efficiency.

Because: Its Assembly form has an appeal all its own. Assembling the set is both a pleasure and highly instructive. Every part is so uniquely designed and carefully planned that correct assembling is made absolutely certain and easy. The Panel is drilled and engraved ready to be screwed on handsome mahogany finished cabinet, all wires are cut and bent ready to go on; complete printed instruction sheet shows how to install set, erect antenna, connect batteries, etc.

Therefore: With all these "reasons for being" this set should be your leader. Adopt it with the fullest confidence that all these statements will be proven in practice. Send in your initial order for immediate deliveries. Don't **gamble** on radio sets, but **merchandise** one that is made to meet public approval.

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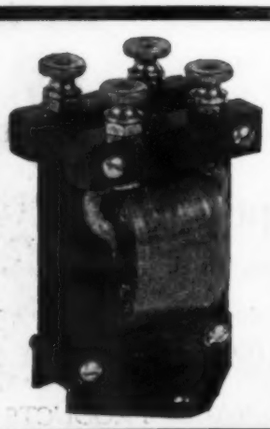

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dielectric and the construction is said to prevent howling due to changes in capacity under the influence of audio frequency currents flowing through the circuit. Capacities range from .0001 to .005.

These condensers are supplied in two types, one with Fahnestock connectors and grid leak clips, made especially as a grid condenser and the other is provided with ordinary binding posts.

Hutchison Phono-Phane Detector

A detector operating on a new principle has recently been placed on the market, under the name of Phono-Phane, by the Hutchison Radio Company, 342 Madison Avenue, New York City. The Phono-Phane is said to be more sensitive than the average crystal and is not susceptible to either

physical or electrical disturbances. Phono-Phanes are adjusted at the factory and once adjusted they cannot be disturbed even with the most violent treatment. They are also able to withstand heavy discharges of static and it has been found that these charges in no way effect the device.

It is only necessary to insert the Phono-Phane in the circuit in place of the crystal detector. The sensitive element is encased in a heavy fiber tube with nickel plated brass ends. The retail price of the Phono-Phane is $3.50.

Who Says the Radio Trade is Not Improving Right Along? Make Your Prospects Think of the Coming Summer and the Pleasures to be Enjoyed Through Listening to Radio Entertainment Out of Doors

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Best Value on the Market

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250 V., 500 V., A. C.
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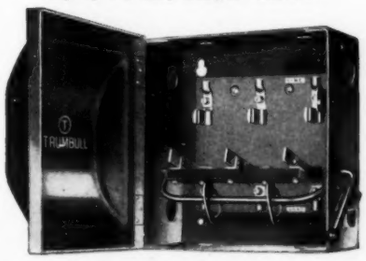

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